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AUTHORIZING APPROPRIATIONS FOR THE NATIONAL SCIENCE FOUNDATION FOR FISCAL YEAR 1986

August 28, 1985.—Ordered to be printed

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Mr. Hatch, from the Committee on Labor and Human Resources, submitted the following

REPORT

[To accompany S. 801]

The Committee on Labor and Human Resources to which was referred the bill (S. 801) having considered the same reports favorably thereon with an amendment and recommends that the bill (as amended) do pass.

I. Brief Summary

The bill authorizes appropriations for the National Science Foundation for fiscal year 1986 in the following categories and amounts:

Mathematics and Physical Sciences	$406,820,000
Engineering	160,640,000
Biological, Behavioral and Social Sciences	261,010,000
Astronomical, Atmospheric, Earth and Ocean Sciences	357,670,000
Scientific, Technological, and International Affairs	37,770,000
Advanced Scientific Computing	44,010,000
Program Development and Management	72,230,000
U.S. Antarctic Program	110,080,000
Science and Engineering Education	50,550,000
Special Foreign Currency	1,000,000
Total	1,501,780,000

The bill also reauthorizes Titles I, II, III, IV, and VI of Public Law 98-377, the Education for Economic Security Act of 1984, for an additional three years.

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II. Section-by-Section Summary

TITLE I—NATIONAL SCIENCE FOUNDATION AUTHORIZATION

Section 102 designates recommended funding levels for all NSF research and education activities for fiscal year 1985.

Section 103 stipulates that appropriations made for research, education and special foreign currency can be obligated throughout the period specified in the appropriations act.

Section 104 limits the amount which can be spent on official consultation, representation, etc., to $3,500. Such expenditures can be made only at the discretion of the Director.

Section 105 authorizes NSF to draw $1,000,000 in foreign currencies for NSF expenses incurred outside of the United States.

Section 106 authorizes the Foundation to transfer funds from any one category to another as long as the amount is not greater than 10 percent of the authorization for the first category. If the proposed transfer is in excess of 10 percent, the Director must notify Congress and can effect the transfer only if there is no objection.

Section 107 amends specific provisions of the National Science Foundation Organic Act of 1950 and Public Law 95-99, the National Science Foundation Authorization Act for Fiscal Year 1978.

Section 108 amends the National Science Foundation Organic Act of 1950 to incorporate engineering into the mission statement and activities of the Foundation.

Section 109 amends the Science and Technology Equal Opportunities Act to incorporate engineering in the mission statement and activities authorized by the Act.

Section 110 requires the peer review of any decision to close a federal research facility.

Section 111 authorizes the National Science Foundation to design, establish and maintain a data bank of information pertaining to scientific facilities and instrumentation.

TITLE II—EDUCATION FOR ECONOMIC SECURITY REAUTHORIZATION

Section 201 amends Section 101 of the Education for Economic Security Act by deleting the requirement for joint applications for teacher institutes and instead requiring only evidence of cooperation between the applicant and an institution of higher education or local education agency, as the case may require.

Section 201(c) amends Section 113 of the Education for Economic Security Act by stipulating clearly that all applications for teacher institutes are subject to peer review.

Section 201(c)(2) amends Section 113 by raising the limit on awards for teacher institutes to $300,000.

Section 202 makes technical and conforming changes.

Section 203 amends the Education for Ecomomic Security Act by providing a formal authorization for the graduate fellowship program.

Section 204 amends Section 164 to distribute the funds set-aside for science and engineering education.

Section 204(a)(1) states that not less than $3,000,000 shall be available to implement Part C of Title I of the Education for Economic Security Act.

Section 204(a)(2) permits the Foundation to apportion remaining funds authorized under Section 102(b)(9) among the other authorized programs.

Section 204(b) states that not more than $1,000,000 shall be available to carry out title IV of the Education for Economic Security Act.

Section 221 amends Section 3(l) of the Education for Economic Security Act to make technical changes.

Section 222 reauthorizes title II of the Education for Economic Security Act for three years at a funding level of $350,000,000 for each year.

Section 223 states that the Secretary shall reserve 1 percent of the funds appropriated for title II to carry out programs in Indian schools operated by the Department of the Interior and in the U.S. territories.

Section 224(a) includes "training" as an activity for local education agencies under title II Elementary and Secondary Education programs.

Section 224(b) is a technical amendment.

Section 224(c) provides states with an option concerning the calculation of private, non-profit schools enrollments for the purposes of distributing funds.

Section 224(d) is a technical amendment.

Section 225 is a technical amendment clarifying intent.

Section 226 makes technical and conforming amendments.

Section 226(c) requires the Secretary to submit a summary report of the final version of the formal assessments required by the Act to the Congress.

Section 227 makes technical and conforming changes.

Section 228 makes technical amendments.

Section 229 clarifies the intent that cooperative agreements may also be entered into by the Secretary.

Section 230 makes technical and conforming changes.

Section 231 amends title III by striking the word "Foundation" where it appears and inserts the word "Secretary" (administration of title III is transferred from the National Science Foundation to the Department of Education).

Section 232 makes technical and conforming changes.

Section 233 authorizes $50 million for each of the fiscal years 1986, 1987, and 1988.

Section 241 authorizes $1 million for the Presidential Excellence in Teaching Mathematics and Science Awards for fiscal year 1986.

Section 251 reauthorizes title VI of the Education for Economic Security Act for fiscal years 1986, 1987, and 1988.

III. HEARING

The Committee on Labor and Human Resources held a public hearing on April 30, 1985. The following persons and organizations presented testimony for the record:

Mr. Erich Bloch, Director of the National Science Foundation.

Mr. Roland W. Schmitt, Chairman of the National Science Board and Senior Vice President of General Electric Corporation.

Dr. David A. Hamburg, President, American Association for the Advancement of Science.

Dr. Michael S. Pallak, Executive Officer, American Psychological Association.

Dr. Ellis K. Fields, President, American Chemical Society.

Mr. Donald G. Weinert, Executive Director, National Society of Professional Engineers.

Dr. Lynn Arthur Steen, President, Mathematical Association of America.

Mr. Robert F. Acker, Chairman, Public Responsibilities Committee, American Institute of Biological Sciences.

Dr. Harlyn O. Halvorson and Dr. Monica Riley on behalf of the American Society for Microbiology.

Dr. John C. Crowley, Director of Federal Relations for Scientific Research, Association of American Universities, and on behalf of the National Association of State Universities and Land-Grant Colleges, American Council on Education, Association of Graduate Schools, and the Council of Graduate Schools.

Mr. Robert W. Krauss, Executive Director, Federation of American Societies for Experimental Biology.

Consortium of Social Science Associations.

American Society for Engineering Education.

IV. NSF FUNCTIONS AND MANDATE

The National Science Foundation (NSF) is an independent federal agency established by the National Science Foundation Act of 1950 (P.L. 81-507) to promote and advance scientific progress in the United States. The concept of a National Science Foundation was an outgrowth of the important contributions made by science and technology during the Second World War. Since its establishment in 1950, NSF has occupied a unique place among federal government agencies, with responsibility for the overall health of science across all disciplines, in contrast to other agencies that support research directed to specific missions.

NSF maintains U.S. scientific strength by funding research in all fields of science and engineering through grants and contracts to more than 2,000 colleges and universities and other research institutions in all parts of the United States. The Foundation accounts for about 28 percent of federal support for basin research going to academic institutions.

NSF receives over 27,000 unsolicited proposals each year for research and graduate fellowships and makes over 12,000 awards. The awards go to universities, colleges, university consortia, not-for-profit institutions, and small businesses. NSF operates no inhouse laboratories, but does support the operation of National Research Centers, oceanographic research vessels, and Antarctic research stations. The Foundation also supports cooperative research efforts by universities and industry and U.S. participation in mutually beneficial programs of international scientific cooperation. Except for administration costs, funds appropriated to the Foundation by the Congress go to non-federal research and science education activities.

Foundation staff is assisted by formal advisory committees and ad hoc reviewers of research proposals. This advisory system, which provides advice both on program direction and on specific proposals, involves more than 50,000 scientists and engineers each year. NSF staff members—who are experts in science or engineering—make final award decisions. Applicants receive verbatim unsigned copies of peer reviews and can appeal award decisions through a formal mechanism.

A 25-member National Science Board establishes policies for the Foundation, within the framework of applicable policies made by the President and the Congress. The Board, the Director of the Foundation, the Deputy Director, and four Assistant Directors are appointed by the President with the advice and consent of the Senate; three additional Assistant Directors are appointed by the Director.

By establishing NSF in 1950, the Congress recognized that support of long-term fundamental research in all fields of science and engineering and the teaching and learning of science contribute to the strength and well-being of the nation in many ways. Research discoveries precede and underlie advances in many important areas of federal responsibility, including national defense, economic growth, health, energy, environment, and agriculture. Scientists and engineers help to create the future by developing new knowledge, ideas, techniques, and applications—and new generations of scientists are educated through their work as graduate students on research projects.

V. Program Descriptions and Committee Views

The Committee recommends an authorization of $1,501,780,000 for fiscal year 1986. This is the same as the amount appropriated to NSF for fiscal year 1985 and $67.7 million below the foundation's request. The Committee's decision to hold the 1986 NSF budget at the 1985 level is in response to the immediate need to reduce federal expenditures. The total authorization level is consistent with both House and Senate passed budget resolutions. In no way should this action be interpreted as a sign that the Committee is critical of the Foundation's programs. The Committee continues to support NSF's basic research and education activities.

The Committee's recommendation for fiscal year 1986 reflects the overall strategy and program priorities that are evident in the Foundation's proposals for fiscal year 1986. Thus, instead of a line item budget freeze, the Committee's recommendations allow NSF to proceed with its highest priorities, although in some cases, this would be at a rate less than originally proposed. Additionally, the Committee suggests that the Foundation look first to the construction of major capital research facilities followed by instrumentation and individual project support as a way to apply the Committee's funding recommendations to the specific research programs.

A. Mathematical and Physical Sciences

The Committee recommends $406,820,000 for this activity. This represents a reduction of $22.2 million below the request but an increase of $10.2 million above the 1985 level.

The goals of the Mathematical and Physical Sciences (MPS) activity are to develop a fundamental understanding of the physical laws that govern the world and the universe in which we live and to assure that the next generation of scientists will receive the diversity and quality of training essential to meet the future academic, industrial, and defense needs of the United States. To further these goals, research activities are supported in the disciplines of mathematics, computer research, physics, chemistry, and materials research. Research results in these fields provide the underlying knowledge for the future technological developments upon which our economic and social well-being so critically depend. They also form much of the intellectual underpinning for the biological, environmental, and behavioral sciences and engineering, as well as provide many of the research instruments and techniques necessary to progress in these fields.

In order to meet the Foundation's responsibility for assuring the health and vitality of research in the MPS disciplines, research support is provided, in the basis of scientific merit, across the broad spectrum of fields and subfields. Most awards assist individuals or small groups of faculty who, together with their students and postdoctoral associates, carry out research projects in their own laboratories. However, in some areas access to more centralized, major research instrumentation and a broader range of scientific capabilities are required to carry out the research programs effectively. To meet these additional requirements, support is provided for a variety of university laboratories. Included are several low energy cyclotron and Van de Graaff accelerator laboratories in nuclear physics, an intermediate energy electron accelerator at the University of Illinois, and more than a dozen interdisciplinary Materials Research Laboratories. Through the end of fiscal year 1985 it is estimated that coordinated experimental computer research facilities will have been established at over 20 universities in order to provide improved, modern experimental capabilities in this field.

Finally, a number of national user facilities are supported in selected fields in order to make major experimental or intellectual resources available to the broad scientific community. These include the Cornell Electron Storage Ring for elementary particle physics experiments; the Indiana University Cyclotron Facility and the Michigan State University Superconducting Cyclotron Laboratory in nuclear science; the Computer Science Research Network; the National Magnet Laboratory at the Massachusetts Institute of Technology, synchrotron radiation facilities at the University of Wisconsin and Cornell University, and the Small Angle Scattering Facility at Oak Ridge for materials-related research. Also included in this category are the Institute for Theoretical Physics at Santa Barbara and the mathematical sciences research institutes at Berkeley and Minnesota.

B. Engineering

The Committee recommends a total of $160,640,000. This is $9.4 million below the request but almost $11 million over the 1985 level.

Engineering is the key to converting scientific progress and technological breakthroughs into useful products and processes. The

U.S. must have a strong engineering science base and research infrastructure if it is to maintain its competitive edge. The challenge for U.S. engineering demands that an array of needs be met that could not be completely addressed through traditional NSF support programs. Consequently, NSF has reorganized its engineering Directorate and restructed its engineering program.

Strong support is continued for engineering research in science-driven technological fields. No area of engineering research is without a home in the new NSF program structure. Cross-disciplinary research initiatives have been established within the directorate. Greater emphasis is given to research on design to bring analysis and synthesis into better balance, and support for experimental research is expanded to achieve a better balance between analytical and experimental research.

The new approach moves NSF into an active engineering support role, with efforts aimed at developing knowledge in areas of emerging and critical engineering systems or technologies. An equally important thrust is designed to create engineering science bases for design, manufacturing, and computer engineering, areas that have not previously been a major focus of academic research. This thrust recognizes the importance of engineering research in fields which are driven by technological needs in contrast to those that are science-driven.

The Foundation's new engineering structure also recognizes the need for university and industry engineers to collaborate on large-scale innovative engineering systems research. The Engineering Research Centers program, which began in fiscal 1985, will further research in systems integration and experimental research and remains an intergral part of the new engineering stance.

In its more active role, the Foundation will seek to anticipate future developments as early as possible and focus significant research activity in areas where new knowledge can contribute to efforts to maintain the industrial competitiveness of U.S. industry. More emphasis will be given to research on engineering systems and to programs that give undergraduate and graduate engineering students experimental research experience. The Foundation will also explore opportunities for international cooperative research efforts where such research can benefit U.S. engineering.

Similar to last year, the Commission has also included the "engineering amendment" in S. 801. This amendment, first introduced in the Senate in 1984 by Senator Quayle, and included in the Administration's recommendations for fiscal year 1986, adds "engineering" to the mission statement of the Foundation's 1950 Organic Act. This has been done not only to clarify engineering's place within the agency, but also to indicate the importance of fundamental engineering research and education. The Committee believes that both scientific and engineering research are essential activities and that one supports the other. Both science and engineering are necessary to maintain our Nation's position as a leader in technological and scientific innovation. The Committee acknowledges the growth of NSF support for engineering activities over the past three years and is pleased that this growth, which includes such important areas of fundamental engineering research as automated manufacturing, robotics and microelectronics fabrication, has not come at the expense of other scientific research programs.

C. Biological, Behavioral, and Social Sciences

The Committee recommends $261,010,000 for fiscal year 1986. This is $11.1 million below the request but $9 million above the 1985 level.

The goal of the Biological, Behavioral, and Social Sciences (BBS) activity is to increase knowledge about life forms and life processes through research on biological and social phenomena. Research ranges from studies of the fundamental molecules of living organisms to studies of the complex interrelationships between human populations and their social and economic institutions and organizations.

The scientific opportunities in biology continue to increase dramatically as a result of advances in molecular genetic techniques and the development of increasingly sophisticated instrumentation. Research support will reflect these trends and allow this activity to continue the efforts begun in fiscal year 1984 to support the most promising projects using such techniques.

Support also will be provided for multidisciplinary research, jointly funded by the Mathematical and Physical Sciences Activity, in the chemistry of life processes and in other fundamental research areas related to advances in biotechnology. Emphasis will continue to be placed on fundamental research in the plant sciences and in the neurosciences, where technological advances allow scientists to examine the nervous system in greater detail. Project support in the biosciences will be provided for instrumentation and other resources necessary to maintain research productivity.

In the social and economic sciences support will be provided for the major data bases, instrumentation for the analysis of larger-scale data bases, and basic economic and methodological research. Anthropology and cognitive science will focus on such topics as archaeological dating techniques and development of cognitive capacities. Information science and technology will support fundamental research to determine general information system design principles, and on the economic and social impact of information.

D. Astronomical, Atmospheric, Earth, and Ocean Sciences

The Committee recommends a total authorization of $357,670,000 for fiscal year 1986. This amount is $14.5 million below the request but $6 million above the 1985 level.

Research in the Astronomical, Atmospheric, Earth, and Ocean Sciences is supported to increase scientific knowledge of the natural environment on earth and in space and of the various effects of human activity that interacts with this environment. General objectives of this research are to: increase understanding of physical principles governing the universe and of the properties and behavior of astronomical objects, including the solar system, individual starts and stellar groups, and exotic phenomena such as quasars, active galactic nuclei, and molecular masers; advance knowledge of the earth's upper and lower atomsphere, including its general circulation and the physical bases of climate, and the smaller-shorter-term phenomena that describe weather processes; provide further insights into the physical and chemical characteristics and processes that produce such geologic features as hydrocarbon and are deposits and events such as earthquakes, volcanic eruptions, and landslides; improve knowledge of the physical, chemcial, geological, and biological processes in the world's oceans, and at their boundaries with the atmosphere, the shoreline, the sea floor, and the earth's crust beneath; and foster, in the arctic region, multidisciplinary research that (1) helps to solve regional and worldwide problems and to protect the environment, and (2) ensures equitable and prudent use of resources.

Within the total provided for the directorate, the Committee intends that progress be maintained in research into the continental lithosphere. The Committee recognizes the interdependent nature of the activities associated with the program and notes the high priority the geological sciences community attaches to this activity. The Committee also reaffirms its strong support for the continued construction of the Very Long Baseline Array radio telescope and operation of the revamped ocean drilling program.

E. Scientific, Technological, and International Affairs

The Committee recommends $37,770,00 for this activity. This amount is $6.7 million below the 1985 level and $600,000 below the request.

The principal mission of the Scientific, Technological, and International Affairs (STIA) activity is to serve as a bridge between scientific disciplines and to link researchers in various sectors.

The goals of STIA are to: increase opportunities for small science and technology-based firms to perform research in highrisk scientific and technical areas; facilitate cooperative activities with foreign scientists and engineers; improve information resources for decisionmaking on scientific and technological issues; and extend research opportunities for women, minority, and handicapped researchers, as well as faculty, from predominately undergraduate institutions.

Part of the STIA budget reduction is the result of a transfer of funding responsibility to the research directorates for Research Opportunities for Women, Minority Research Improvement, Support for Predominantly Undergraduate Institutions, and the Experimental Program to Stimulate Competitive Research. The Committee reiterates its longstanding support of these programs and expects each directorate to give appropriate attention to meeting their objectives.

F. Advanced Scientific Computing

The Committee recommends $44,010,000 for advanced scientific computing. This is $2.2 million below the request but $2.5 million above the 1985 level.

The Advanced Scientific Computing activity provides high-quality access to advanced computation facilities to all segments of the science and engineering research community that are supported by NSF. The specific objectives are: to encourage development of academically oriented computational facilities, including state-of-the-art computational equipment; to provide the large-scale computational resources essential to the development and training of skilled computational scientists and engineers; and to extend and develop the use of necessary networks and communications systems to access to computing facilities.

The immediate goal is to expand access to the new national advanced computing facilities begun in fiscal year 1985. In addition, the quality of that access is to be improved through network upgrading and projects to test new technology. Supercomputers are powerful instruments; they have contributed and will in the future continue to contribute significantly to the advancement of scientific and engineering research. Access to new centers will increase opportunities (1) for researchers to attack problems through the development of complex numberical models; (2) for research communities to collect and analyze date for acquiring new insights into key scientific and technical problems; and (3) to train graduate students in the use of supercomputers and the operation and management of supercomputer centers.

The Committee remains a consistent supporter of advanced scientific computing and applauds the progress the Foundation has made thus far with this program. The establishment of centers at Princeton, University of California at San Diego, The University of Illinois, Cornell, and Pittsburgh is considered an important first step in providing the academic research community with access to these powerful computational tools.

G. Program Development and Management

The Committee recommends $72,230,000 for program development and management (PD&M) expenses in fiscal year 1986. This represents an increase of $1.5 million over the current plan for fiscal year 1985 and $2.3 million more than the original request.

The Program Development and Management Activity (PD&M) includes funds for staff salaries, rent, travel, and other operating expenses necessary for the effective and efficient operations and management of the NSF. Operating costs for administering the Foundation's program responsibility are included in this activity.

The Committee has adjusted this activity, using available resources, to support a salary freeze and increased program oversight. This is in lieu of a 5% salary reduction as originally proposed by the Administration.

H. U.S. Antarctic Program (USAP)

The Committee recommends $110,080,000 for this activity. This represents a $10 million reduction from the request and a level equal to the fiscal year 1985 appropriated level. The difference between the request and the Committee's recommendation should be applied first to the operations support component of the program.

The U.S. Antarctic Program is conducted by the National Science Foundation as a national program. United States policy calls for the mainenance of an active and influential presence in Antarctica. Scientific research is the principal expression of this presence. U.S. objectives and policy for Antarctica have been subjected to major review within the Executive Branch and the Legislative Branch on a number of occasions. The present objectives and policy were affirmed in a Presidential decision memorandum of February 5, 1982, and again in an Office of Management and Budget review in Spring 1983. Current policy maintains NSF responsibility to budget for and manage the program including the operational support, as a single package. Both the President and Congress have recognized that these responsibilities are over and above the normal activities of the NSF, thus while the NSF has the responsibility for funding and managing the program, the Departments of Defense and Transportation are to provide, on a reimbursable basis, requested logistic and other operational support.

I. Special Foreign Currency

The Committee recommends $1,000,000 for this activity in fiscal year 1986. This is equal to the budget request and $1.8 million below the 1985 level.

The Foundation seeks to strengthen the U.S. research effort by supporting research projects in countries where U.S.-owned foreign currencies are available "in excess" as determined by the Department of the Treasury. NSF supports scientifically meritorious projects in Pakistan and continues to manage a similar program in India. The funds (special foreign currency) must be used within these countries. The projects advance science and contribute to the solution of problems in astronomy, atmospheric sciences, chemistry, engineering, the life sciences, the materials sciences, mathematics, physics, and the social sciences, bringing U.S. scientists and engineers together with their foreign counterparts for joint research efforts. In addition, binational workships are supported to identify specific areas of mutual research interest.

The fiscal year 1986 budget reflects a change in the source of funding for research cooperation with India. Starting in fiscal year 1986, plans are to fund such cooperation through the United States-India Fund for Cultural, Educational, and Scientific Cooperation and not through this NSF budget activity. NSF will continue to manage the program, however. The requested total amount of $1,000,000 in special foreign currency will maintain close to the present level of participation of U.S. scientists and engineers in research cooperation with Pakistan and limited participation in the U.S.-Poland Joint Board.

J. Other NSF Issues

Facilities Data Collection and Analysis

The Committee recognizes the growing concern over the status of our academic research facilities. The Committee notes the previous work of an ad hoc interagency steering committee to document past expenditures and future needs for academic research facilities, the June 1984 National Science Board discussion of the infrastructure issue, and the July 1985 conference at the National Academy of Sciences on academic research facilities. However, it appears that a comprehensive and up-to-date baseline picture of academic research facilities is needed before one can confidently describe the nature of the facilities issue and recommend appropriate action to address it. Therefore, the Committee has included bill language that would authorize NSF to design, establish, and maintain a data collection and analysis capability for the purpose of identifying and assessing the research facilities needs of universities on an on-going basis. The Foundation is to conduct these research facility surveys every 2 years and report the results to the Committee. The first report should be submitted by September 1, 1986.

National Facilities Review Process

The Committee is aware of the on going review concerning the future of the Sacramento Peak Observatory within the National Optical Astronomy Observatories. The Committee is supportive of the review process which involves the Astronomy Advisory Committee, the National Science Board, the solar physics community, the U.S. Air Force, and NASA. The Committee has included bill language that reinforces the scientific review process for this and other national research facilities. The Committee looks forward to receiving the recommendations from NSF that will be emerging from this scientific review process.

Research into Ethics and Values

The Committee has included bill language requiring the Foundation to support not less than $1,000,000 for ethics research from within the total NSF budget provided. The Committee does not expect the Foundation to withdraw its support for research in this area. Therefore, while the resources to support research in ethics and values may be drawn from a number of disciplines, the Committee expects the Foundation to monitor and account for the expenditure of the funds in this particular area of research. The Committee expects to receive an accounting on the expenditure of these resources by December 30, 1986.

Explanation of statutory changes

Explanation of Proposed Change #1—Special Commissions.—Section 4(h) of the National Science Foundation Act authorizes the National Science Board to establish "special commissions" from time to time as it may deem necessary for the purposes of the NSF Act. Such a commission can be a useful means of focusing the attention of distinguished scientists and other citizens on specific problems relating to science. However, limitations on the composition and duties of special commissions imposed in section 9 of the Act have unfortunately limited their value and therefore their use.

Currently Section 9(b) of the NSF Act restricts any special commission to making a comprehensive survey of research" and formulating and recommending to NSF an "over-all research program" for a particular scientific field of study. Special commissions would be more helpful and used more often if the commission's writs could be drawn more broadly. The proposed amendment would authorize the National Science Board to establish special commissions to study and make recommendations on any issues relating to the principal areas of responsibility of the National Science Foundation.

Section 9(a) restricts the membership of any special commission to six scientists and five nonscientists. Though this may often be a good number and a good distribution, it is extraordinarily rigid. In many case it would prevent selection of the best mix of scientists who are experts or specialists in the issues to be addressed, scientists who are *not* specialists in those issues, and nonscientists. The amendment allows the Board discretion to take account of the subject and the circumstances in fixing the size of a special commission and determining its composition.

No significant increase in cost or personnel will result if the proposal is enacted. Moreover, most, if not all, special commissions established would be subject to the requirements of the Federal Advisory Committee Act.

Explanation of Proposed Change #2—Resource Centers.—Section 6 of P.L. 95-99 directed the Foundation to establish a Resource Center for Science and Engineering to be located at an educational institution. Four such centers have been funded.

The section of the Foundation's annual authorization act was permanently codified in the United States Code as 42 U.S.C. § 1884, apparently as a matter of codification committee routine. The Foundation sees no reason for this codification. No other specific programs of the Foundation initiated at the direction of the Congress have been permanently codified. Moreover, authority for establishing such centers is now covered under the Science and Technology Equal Opportunitites Act (42 U.S.C. §§ 1885-1885d), making this section redundant. Deletion of the section will simplify the law.

No increase in cost or personnel will result if the proposal is enacted.

Explanation of Proposed Change #3—Disclosure.—A lengthy provision, codified as 42 U.S.C. § 1873a, was added in 1977 to require NSF employees to disclose any financial interests or academic affiliations that might bear on their handling or proposals or other applications. It also requires that the NSF adopt implementing regulations. It is unique, as no other non-regulatory agency of the Federal Government is subject to specific statutory requirements in this area. The *broader* disclosure requirements of the Ethics in Government Act are binding on all agencies, including the NSF. (In fact, under subsection (d), § 1873a(d), most of this section was superseded by the Ethics in Government Act.) Moreover, all agencies are required by Executive Order 11222 to maintain conflict-of-interests regulations that deal with any problems unique to their programs and methods of operation.

The Foundation's conflict-of-interests regulations were extensively revised recently (45 CFR Parts 680 through 684; published in the *Federal Register,* Vol. 47, No. 143, July 26, 1982, on pages 32130 through 32153). The new regulations require both disclosure of all potentially biasing affiliations or relationships and special oversight in cases involving them, with further special handling if necessary (45 CFR Part 681). The statutory provision is no longer necessary, and may be deleted without jeopardizing the integrity of NSF personnel or functions.

No increase in cost or personnel will result if the proposal is enacted.

Explanation of Proposed Change #4—Patents.—Subsection 12(b) of the NSF Act, codified as 42 U.S.C. § 1871(b), bans an NSF employee from owning a United States patent on any invention made in connection with and directly relating to the subject matter of his or her assigned duties.

The Foundation is believed to be the only Federal agency to have a statutory provision governing the allocation of rights to inventions made by its employees. All other agencies are governed by Executive Order 10096, as amended, which permits Federal employee-inventors to retain principal patent rights to their inventions under certain circumstances. (See Section 1(c) of E.O. 10096 and the implementing regulations of the Patent and Trademark Office published at 37 CFR Part 100.) No reason is known for this special restriction on the Foundation's employees. The provision probably resulted from a general congressional concern over the treatment of Federal employees' inventions, which President Harry Truman assuaged by issuing E.O. 10096 in January 1950, just four months before the NSF Act became law.

As far as can be determined, the provision has had no actual effect. The NSF performs no "in-house" research likely to produce inventions. Only one invention has ever been reported by a Foundation employee.

Explanation of Proposed Change #5—Meeting Notification.—Section 4(e) of the National Science Foundation Act now requires that National Science Board members be notified of meetings by registered or certified mail. The amendment deletes that requirement, allowing such notice to be conveyed in any reasonable manner.

Regular National Science Board meetings are scheduled months in advance to give members time to adjust their teaching and research schedules and to accommodate other responsibilities. The formal certified mail notice is a mere formality and is becoming technologically obsolete as new communications methods are developed.

No increase in cost or personnel will result if the proposal is enacted.

Explanation of Proposed Change #6—NSB Review.—This amendment is proposed at the request of the National Science Board, which believes the change would enable the Board to exercise more effectively its program review and oversight functions.

Subsection 5(e) now reads that the Director may not make any contract, grant, or other arrangement without the prior approval of the Board, unless the grant or contract is less than $2,000,000.

This provision was enacted in 1968, replacing a requirement in the original NSF Act that the Board approve all awards. P.L. 90-407, 82 Stat. 360, 363.

The proposed amendment removes the dollar limitation and permits the Board to delegate approval authority to the Director. The National Science Board, however, is obligated by the amendment to inform the House Science and Technology Committee and the Senate Labor and Human Resources Committee of the delegation policy it has adopted and of the precise approval authority that is held by the NSF Director.

Explanation of Proposed Change #7—Outside Activities of Senior Officials.—The NSF Organic Act of 1950 prohibits the Director, Deputy Director, or any Assistant Director from engaging in any outside employment or hold any office in an organization that competes for grants or contracts from the NSF. The purpose of this provision in 1950 was to assuage doubt that officials of the NSF would be private citizens acting in their own interests. It had not been envisioned at that time that the administration of NSF would constitute full-time jobs for these officials. Since NSF officials and Presidential appointees are subject to the Ethics in Government Act, the provision in the NSF Organic Act is duplicative in its intent and raises unnecessary legal questions about applicable standards.

Explanation of Proposed Change #8—Privacy.—This amendment adds a section to the 1950 Statute that protects the privacy of organizations contributing information to the NSF as part of its data analysis function. The amendment exempts such information from the Freedom of Information Act. The current inability of the Foundation to guarantee confidentiality of survey information has hindered NSF's efforts to acquire data on R&D spending, special research emphases, and emerging technologies. Aggregated data would remain available as it is currently.

Explanation of Proposed Change #9—Waterman Award.—The Alan T. Waterman Award is currently given to an outstanding young American scientist. The amount of the award has been established in law at $50,000 a year for a period of not to exceed three years. The proposed amendment would remove the limitation and permit the National Science Board to establish the amount and term of future awards consistent with the policy governing all other grants.

VI. NSF SCIENCE AND ENGINEERING EDUCATION ACTIVITIES

S. 801 authorizes $50,550,000 in new budget authority plus the use of available resources from previously appropriated funds for science and engineering education. Based on the budget justification submitted to Congress as well as on testimony presented to the Committee, the Foundation expects to carry over $31.5 million from fiscal year 1985 into fiscal year 1986, thus providing a total program level of $82 million for science and engineering education.

S. 801 also contains a reauthorization of the Education for Economic Security Act (Public Law 98-377), including Titles I and IV which define NSF's science and engineering education program. Title III, the Partnerships in Education program, previously assigned to NSF for implementation, has been transferred to the Department of Education.

Teacher Institutes

Over the past few years, evidence has been presented to the Committee that, despite a critical need, a severe shortage of well-qualified teachers of science, technology, and mathematics continues to exist. In order to improve the quantity and quality of teaching, efforts must be made to upgrade the skills and understanding of many current teachers; improve the training of incoming teachers; and, in the interim, persons who are qualified to teach mathematics, science, and technology must be found from "non-traditional" sources. The Committee has thus reauthorized the NSF teacher institutes, enhancement activities, to help meet the need to train, retrain, and reinvigorate the nation's precollege teachers of science, mathematics, and technology.

The Committee has relaxed the requirement that applications must be jointly submitted by an institution of higher education and a local education agency or a state education agency. Instead, the Committee's amendment requires only that evidence of collaboration between institutions of higher education and local education agencies and/or state education agencies be contained in the proposal submitted to NSF.

The Committee expects strong collaboration among the many entities which NSF supports in the formulation of projects as well as in their implementation. In particular, the Committee encourages the inclusion of representatives of the target audience, especially classroom teachers, in the planning process. The Committee expects that evidence of this consultation process be apparent within the submitted proposals.

The Committee encourages NSF's solicitation of participation by business and industry, and professional institutions and societies.

The Committee also encourages projects that result in self-sustaining networks among these varied elements—cooperative institutes that will continue to function, supported by non-federal funds.

In reauthorizing Title I of the Education for Economic Security Act, the Committee has also made two additional changes in Part A concerning teacher institutes. On the assumption that all states could benefit from NSF-sponsored teacher institutes, the Committee maintains its mandate that the Foundation should award at least one institute in every state, unless, as the result of the findings of merit review, there is no proposal from a state judged qualified for an award. Language was included in S. 801 which clarifies the Committee's intent that all proposals are subject to peer review and should be awarded on the basis of scientific and educational excellence. However, in granting the foundation this waiver from the requirement that every state should have an award, the Committee encourages the Foundation to consider scientific need and potential as much as the current abilities of the proposing institution(s).

Secondly, the Committee took into account NSF's description of pending proposals for teacher institutions and increased the maximum award to $300,000 from $200,000. It is hoped that this change will permit NSF greater flexibility in evaluating proposals, yet maximize the number of NSF-supported projects.

Finally, while the Committee remains optimistic about the effectiveness of teacher institutes as a means of enhancing teachers' knowledge and ability to teach science and math, the Committee acknowledges that much of the evidence in support of the institute concept is anecdotal. There is some apprehension that teachers who benefit from such enrichment activities do not stay in the teaching profession. The Committee directs the Foundation to keep careful accounts on the effectiveness of its teacher enhancement activities so that future assessments can be made.

Materials Development

The bill also reauthorizes Part B of Title I of the Education for Economic Security Act, a program for Materials Development. The-Committee intends that the same application process will apply for this program as for the teacher institutes, i.e., that evidence of cooperation between institutions of higher education and local education agencies and/or state education agencies will be contained in the proposals for materials development projects. Further, the Foundation is expected to emphasize the creation of meaningful collaborative efforts outside of this requirement. In particular, the Committee reiterates its belief that, within institutions of higher education, both the relevant science department and education department must be involved in the design of the project.

Congressional Merit Scholarships

The NSF is also authorized to establish a program of merit scholarships for students choosing a career in mathematics or science education. In an attempt to elevate the status of teaching as a career, the scholarships have been designated as "Congessional Merit Scholarships in Mathematics, Science, and Engineering Education." The Committee finds that the importance of the teaching profession has been sadly underestimated over the last decades, a situation that is reflected by the decline in teachers' salaries relative to other professions requiring a college degree and other salaries relative to other professions requiring a college degree and other specialized training. It is hoped that these scholarships will not only alleviate some financial burden of the college education for those intending to pursue teaching in mathematics and science, but will also provide long-deserved recognition of classroom teaching. $3 million has been earmarked for the scholarship program for fiscal year 1986.

Director's Discretionary Fund

Part D provides the NSF Director with the authrorization to fund a program of faculty exchanges, or to fund unsolicited proposals which promote the purposes of this Act, but do not fit into the particular program categories established by this legislation. It is, of course, expected that such proposals will be subjected to the same peer review and selection process as any other application submitted to NSF.

The Committee finds the suggestion of faculty exchanges between diverse universities intriguing and potentially valuable to upgrade the quality of science in eligible institutions. Due to the uncertainty, however, of the number of established scientists that would participate in such a program, the Committee opted to allow funding for such proposals at the agency's discretion. NSF is requested to keep the Committee informed on developments in this area.

Graduate Fellowships

Part E of this legislation authorizes NSF to continue with its graduate fellowship program. The objective of the NSF Graduate Fellowship Program is to promote the development of young scientists and engineers, and thereby help to assure a steady flow of high-ability students through the educational and research training systems of the nation. Highly talented U.S. citizens who are beginning graduate study are idenitified in a national competition. The Committee notes that awards for these portable fellowships are made on the basis of merit in all fields of science and engineering. Within this framework, support is also provided for graduate students who are members of ethnic minority groups underrepresented in science and technology through the award of Minority Graudate Fellowships. NSF is the only agency that provides this type of support across all fields of science and engineering.

Fellowship awards provide both stipends and cost-of-education allowances (institutional allowances in lieu of tutition and fees). Up to three years of support is offered to outstanding graudate students for study at institutions of their choice. Full-time study support of this kind has historically accelerated Fellows' progress toward active and distinguished science and engineering careers.

TITLE IV—PRESIDENTIAL AWARDS FOR TEACHING EXCELLENCE

An important objective of this legislation is to recognize the constributions of classroom teachers to our nation, and its future, and to reward individuals in the teaching profession who have demonstrated outstanding ability and extraordinary dedication. The Committee is pleased to have the support and cooperation of the President for carrying out this Title.

Title IV authorizes $1 million for the President of the United States to make awards recognizing excellence in teaching mathematics and science to outstanding educators from every state, the District of Columbia and Puerto Rico. In exercising his authority under this Title to make such awards, the President is to consult with other federal officials, including the Secretary of Education, the Director of the Office of Science and Technology Policy, and the Director of the National Science Foundation.

VII. Department of Education Math and Science Programs

TITLE II—EDUCATION FOR ECONOMIC SECURITY

Title II was primarily a formula grant administered by the Department of Education and carried an authorization of $350 million for fiscal year 1984 and $400 million for fiscal year 1985. Of these funds, 10 percent would be held by the Secretary for discretionary projects and 90 percent allocated to states on a formula basis. Of the funds allocated, 70 percent would be passed through to the local education agencies within the state. Funds for this title would be used primarily for programs of teacher traineeships, and retraining and inservice training for current teachers.

S. 801 is a one year bill which includes a three-year reauthorization of Title II ("Education for Economic Security") and VI (Excellence in Education") of PL 98-377, the Education for Security Act. Because action on these programs was completed just one year ago, the Committee wants to extend them for three years beyond fiscal year 1986. Funding for the Science and Math program (Title II) is just now being received by the states. $100 million was appropriated in fiscal year 1986 for this program to improve the quality of mathematics and science instruction in our elementary and secondary schools. The Committee reiterates the concerns and justifications expressed in the report which accompanied S. 1285 in the 98th Congress (S. Rept. 98-151).

The Committee made a series of amendments to the provisions of Title II which were requested by the Administration. These amendments make either technical changes to Title II of this Act, or changes which facilitate administration of funds under this Title. A description of these amendments is as follows:

Section 222 of the bill provides an authorization to appropriate $350,000,000 for each of the Fiscal Years 1986, 1987, and 1988.

Section 211 of the bill changes the definition of area vocational education school consistent with this definition under the Carl D. Perkins Vocational Educational Act.

Section 223 of the bill clarifies the Secretary's procedure for reserving funds under Title II of the Education for Economic Security Act for schools operated for Indian children by the Department of the Interior, for the Outlying areas, for State grants, and for the Secretary's discretionary program for projects of national significance. Section 223 directs the Secretary to reserve not more than one percent of the amount appropriated for Title II for each fiscal year under this title which the Secretary shall allocate among Guam, American Samoa, the Virgin Islands, the Northern Mariana Islands, or the Trust Territory of the Pacific Islands. In addition, for each fiscal year the Secretary shall allot from not less than one-half of such amount, to an agency designated by the Secretary, for programs for children in elementary and secondary schools operated for Indian children by the Department of the Interior. Section 223 further directs the Secretary to reserve nine percent of the amount appropriated for Title II for each fiscal year to carry out section 212, relating to discretionary grants of national significance.

Section 224 of the bill would clarify that local educational agencies may use funds under Title II of the Act to support teacher training in mathematics and science, as well as in-service training and retraining. Section 224 also clarifies that local educational agencies may use their Title II funds to support such training and retraining in the fields of computer learning and foreign languages, if their needs in the fields of mathematics and science have not been met.

In addition, section 224 clarifies that statutory formula for distributing the Title II funds available for elementary and secondary education programs among local educational agencies. To this end, section 224 would clarify that fifty percent of such funds are distributed according to relative enrollments of children in private nonprofit schools, and that the State educational agency may calculate relative enrollments in private nonprofit schools on the basis of total enrollment in private nonprofit schools or on the basis of the number of children enrolled in private nonprofit schools that desire their children to participate in title II programs. This provision remedies an administrative problem for States that are unable to obtain accurate enrollment data for children in nonparticipating private schools that do not wish to provide such information, but would not diminish the responsibility of local educational agencies to contact private school officials to ascertain whether they wish to participate in title II programs.

Section 225 authorizes institutions of higher education to use funds under Title II to support inservice training and retraining of teachers in foreign languages. This section also authorizes State agencies of higher education to use title II funds reserved for cooperative programs to support development and dissemination projects designed to improve student understanding and performance in computer learning. Improving the quality of instruction in foreign languages and computer learning are important purposes of Title II, and the addition of these authorized activities would promote cooperative programs involving local educational agencies, institutions of higher education and other entities.

This Section further makes clear that private nonprofit organizations which include libraries, museums, educational television stations, and professional mathematics, science, and engineering societies and associations shall be considered eligible to participate in cooperative programs under Sec. 207(c)(1).

Section 226 clarifies that the State's preliminary assessment of the status of mathematics, science, foreign languages, and computer learning within the State shall be available to all local educational agencies to assist them in identifying their unmet needs.

This Section further directs the Secretary to prepare and submit a summary report of the final version of these assessments to Congress.

Section 227 in addition to making several technical amendments, this Section clarifies that funds under Title II are intended to supplement and not supplant non-Federal resources.

Section 228 clarifies that States need not implement the waiver provision in Section 210(c) of the Act, which permits a local educational agency to use its Title II funds for purposes other than teacher training and retraining in mathematics and science if those needs have been met, in an inflexible, all or nothing manner. Section 228 clarifies that local educational agencies to use the remaining portion of their funds for other purposes consistent with the requirements of Section 206(b)(1)(B) of this Act.

Section 229 gives the Secretary greater flexibility in carrying out the Secretary's discretionary program by authorizing that the Secretary may act directly, or may award grants, contracts and cooperative agreements to carry out the Secretary's discretionary program.

Section 230 makes a technical change.

The Committee notes with disappointment that the Department of Education has yet to issue either a notice of application packages for the "Excellence in Education" grant program. Schools were intended, under the legislation, to use the funds over the course of an entire school year. The Department's delay will impose severe hardships on schools wishing to use the funds for the coming school year. As the money becomes available, the Department is directed to assist states and schools which will have to implement Excellence in Education programs in the middle of the school year. To this end, the Committee anticipates swift publication of notice of appplication and distribution of application packages to the states. The Committee further notes that the funds authorized are to be used strictly for curricula modernization, elimination of excessive electives, improvement in student attendance and discipline, demonstrations of alternatives to conventional school days and school terms, experimentation providing incentive to teachers for outstanding performance, demonstrations involving combinations of independent study, team teaching, laboratory experience, and technology utilization, and new and promising models of school-to-school and school-to-community relationships.

TITLE III—PARTNERSHIPS IN EDUCATION

The bill would also reauthorize the Partnerships in Education program, Title III of P.L. 98-377 for three years, Fiscal years 1986-88, and it would transfer the administration of the program from the National Science Foundation to the Department of Education.

Since the enactment of P.L. 98-377 in August 1984, the NSF has not implemented Title III. The Committee has been frustrated in its attempts to work constructively with the NSF to make changes in the partnerships program so that it could be more easily implemented by the agency, and feels NSF purposely avoided any type of implementation. Explanations to the contrary have not been satisfactory.

Because of the failure of the NSF to implement this innovative new program, the Committee has decided that the Partnership in Education program will be better placed within the Department of Education. The Committee strongly supports this program and is anxious for its implementation. The concept of using federal funding as an incentive to schools, colleges, and businesses to come together to share resources and expertise to enhance math and science education to our children is one we should not wait to try. Schools will benefit in many ways from a partnership with the private sector, from increased financial resources, greater access to computers and other equipment, the sharing of expertise of private sector employees, increased community involvement in the schools, and an influx of new idea and creative teaching methods. The private sector will benefit by ensuring that the schools are providing educational skills that are relevant to a real world experience, and, at the higher education level, by finding, training and encouraging potential employees.

The Committee has agreed to reduce the authorization level for the Partnership in Education program from the FY 1985 level of $60 million to $50 million for FY 1986-1988, as part of the transfer of authority to the Department of Education. It is anticipated that because Title III is a program for making individual awards for innovative projects for the improvement of math and science education, it will be administrated by the Office of Educational Research and Improvement. If this program were fully funded and matched, an additional $100 million would be available each year to improve the teaching of math, science, and engineering in our schools. This matching requirement is extremely important to the design and success of the program, and the Committee is confident that the contributions by the schools, colleges, states, and businesses will result in well-thought out local programs and a strong commitment by all involved to see the project through successfully.

Title III as amended directs the Secretary of Education to establish a program of matching federal grants to local education agencies, institutions of higher education, and states which establish Partnerships in Education. The Partnerships in Education will encourage cooperation among local and state officials, educators, and industry leaders to improve the quality of mathematics, science, and engineering education. Funding will be provided on a matching basis: 50 percent federal authorizations under this Title; 30 percent private business contributions, and; 20 percent from any other nonfederal sources.

The Committee recognizes that educational institutions alone cannot meet the nation's need for improved mathematics and science instruction. Only through a partnership among business, schools, government and other concerned partners, can we adequately mobilize our educational system for economic growth. Industry must play a major role in providing direction, expertise and investment. Many companies have recognized this need. They see their investment in education not just as charitable gifts, but as an important element in their long-term competitive strategy. More and more companies are instituting university programs to strength technological education and joint research ventures. Major corporations are contributing resources to local school districts, "adopt-a-school" programs, and local Chamber of Commerce initiatives in the primary schools. For the purposes of this title, a predominantly self-sustaining governmental corporation such as the Tennessee Valley Authority, which has the characteristics of a for-profit, private sector business concern, may be considered a "business."

Similarly, state governments are also recognizing the importance of education in mathematics, the sciences, engineering and advanced technology in meeting their objectives for economic development. Many states have begun programs to invest in cooperative education programs with their public and private universities in order to attract new firms. The National Governors Association has recently established a Task Force on Technological Innovation, reflecting this growing recognition of education as a tool for economic development.

Under Section 308 the Secretary shall establish guidelines for the proposal process and shall establish the criteria for making awards for the projects. Final selection of awards shall be made by the Secretary on the basis of quality and merit. In the event of substantially equal quality and merit among applicants, the Committee intends for grants to be made so as to result in the widest geographic distribution of awards among states. Additionally, to the extent possible given merit as the dominant criteria for selection, the Committee encourages the Secretary to give special consideration to those institutions or LEA's with experience and past success in cooperative ventures with the private sector. It is not intended, however, that Title III projects will be substituted for ongoing, existing cooperative programs.

The Committee anticipates that the initiative for these Partnerships in Education will come from the grassroots level, e.g., the local educational agencies, institutions of higher education and other appropriate organizations. These institutions will reach out to the business community, seeking funding and cooperation to establish Partnership in Education programs.

These local officials and community leaders can then go on to the state administrations, seeking guidance, support and additional matching resources, using the application procedure outlined in Section 307. States are given the flexibility to use any non-federal source of funds for their non-federal share—thus giving financially-pressed states a lift into the program. Under Section 306 states are required to approve applications for grants before final proposals may be submitted to the Secretary. Note that the Committee has granted the states flexibility to choose from a variety of roles in the Partnerships. Some states will be active participants in both funding and program content; others will merely provide funding; still others will only serve as a conduit for outside of non-federal funding.

The Committee believes that the involvement of governors and state administrations in the Partnerships will add significantly to the quality of proposals. State involvement brings more resources to bear on the problems and continues recognition of education as a primary responsibility of the states.

The purpose of this Title is to encourage local initiative for quality mathematics and science education for students, including opportunities for quality education programs in these fields. The federal government should build on the initiatives of educators, industries and the states, not compete with them.

The Committee recognizes the distinct needs of elementary and secondary schools and post-secondary institutions. Section 305 of the Title has been organized into two parts to highlight the need for separate application procedures and permissible uses of funds for these two distinct groups.

Under Section 305(a), Partnerships in Education at the higher education level may include the use of funds for improving instruction, scholarships to student, faculty exchange programs, business, research, equipment and public information programs.

The Committee recognizes that large numbers of persons enrolling in an institution of higher education as defined in this Act enter a program administered by a junior or community college as well as that every employed scientist or engineer requires from three to five technically trained support personnel whose training is usually acquired through the community colleges and technical institutes. For these reasons, in developing guidelines for implementing this Act, the Secretary is encouraged to pay particular attention to both the needs of these institutions for increasing their staff competencies as well as their unique ability to supply technically competent workers in scientific fields. Moreover, the Secretary, in making grants to state agencies under Title III, should encourage states to expand and build upon the cooperative industry-education programs that exist in many jurisdictions between the community colleges and leaders in business and industry.

Under Section 305(b), Partnerships in Education at the precollege level may include use of funds for teacher exchange programs in which teachers participate in private business concerns, and employees of business participate in the LEA. Use of funds may also include training and retraining of teachers, and programs which encourage students to observe, participate and work in private business concerns.

Federal funds may not be used to pay stipends directly to employees of for-profit business concerns under Section 306(a)(4)(c).

Rather, funds could be spent to provide support for such personnel such as instructional materials, equipment and administrative services.

Likewise, the Committee feels strongly that a Partnership program should not become an inducement for teachers to leave public education for the private sector. Thus, under section 306(a)(4)(D) teachers and faculty receiving salary support from the Partnership program are expected to make a personal commitment to remain in teaching for three years following termination of such support.

The use of Partnership funds donated by business to provide support for employees of private business concerns to become consultants, lecturers, teaching assistants and teachers should provide LEAs with flexibility to use employees in any productive capacity connected to the classroom.

Under section 305(b)(2)(B), the Committee recognizes that state and local teaching certification requirements will govern the extent of involvement of such personnel in the classroom.

Scholarships established by institutions of higher education under section 305(a)(2) are not restricted to those students pursuing a course of study which will qualify them to teach, but are also open to students studying disciplines in mathematics, science and engineering. The Committee anticipates that a significant number of these scholarships will be awarded to undergraduate students.

Section 305(a)(2)(F) makes possible use of funds for the promotion of public understanding of mathematics, science and engineering. The Committee anticipates that a significant number of these programs will include educational television production, including planning, development, and the purchase of programming. Preference should be given to media proposals which encourage young people to become interested in science and technology, which foster scientific and technological literacy and which can be adapted for home and classroom use, and which extend educational use to public institutions such as libraries and museums. The Committee wishes to emphasize, however, that programs designed to promote the public's understanding of science and math shall not promote views which could be construed as politically partisan or philosophically value laden.

The states may obtain their 20 percent non-federal share of funds from outside sources, such as private business concerns, non-profit entities, professional societies, or other institutions. The intent of the Committee is clear that the non-federal share must supplement, and not supplant, other federal programs.

Regional partnerships and consortia arrangements which cross state boundaries are provided for in section 306(b).

The Committee believes strongly that private schools, both elementary and secondary and post-secondary, should have equal access to grants under this title. For this reason, sections 309 and 306(a)(7) were added as amendments to expressly include private colleges, universities, and primary and secondary schools.

In order to allow full access to the program by private schools and universities, the Committee believes the use of advisory commissions should be considered by state administrations. According to the report of the National Governors Associations Task Force on Technological Innovation, 22 of 32 responding states have organizations outside state government, but with close ties to state government, that advise state policymakers on high technology issues. It is essential to the success of a highly competitive program such as the Partnerships in Education that all qualified applicants be allowed to compete for grants. To this end, the program must be operated under the advice and counsel of all institutions of higher education and elementary and secondary education, both public and private.

VIII. REGULATORY IMPACT

In accordance with paragraph (5)(a) of Rule XXIX of the Standing Rules of the Senate, the following statement of regulatory impact of S. 801 is made:

This measure represents a one year extension of existing NSF programs and activities and proposes specific levels of funding. There is no additional regulation anticipated as a result of the enactment of this legislation.

Title I of the Education for Economic Security Act (PL 98-377), administered by the National Science Foundation authorizes the NSF to grant funds to educational entities, or to consortia of entities, to advance mathematics and science education by means of teacher institutes, materials development, excellence in teaching awards, business-education partnerships, and a Director's discretionary fund. Such awards will be based on proposals submitted by the entities. NSF has already established a sophisticated system of peer review for determining which proposals will be funded as well as a standard manual for grants administration. It is, therefore, not anticipated by the Committee that extensive resources would necessarily be devoted to either the selection or monitoring procedures. It will be the responsibility of the proposers to indicate in the context of their individual submissions to NSF how they have met the requirements of the Act. To the extent that compliance with these requirements increases the amount requested for the grant, fewer grants may be awarded given the limited authorization of funds. The Committee believes, however, that the assurances requested by the Act are not burdensome and are necessary to ensure fairness and the most effective use of resources overall. It should be pointed out specifically that the Committee does not intend to place the National Science Foundation or its officers in a position of enforcement greater than what they now hold in the course of administering grants for scientific research throughout the nation. The Committee believes NSF is able to maintain strict accountability for the uses of funds in accordance with this Act through its traditional monitoring and administrative procedures.

Title II is a formula grant to states and local education agencies for the purpose of supplementing local efforts for teacher training, retraining, and inservice training. However, 10 percent of the funds authorized for this Title will be reserved for the Secretary of Education to expend on projects of national significance. While the Committee has been specific in setting the direction for these funds, i.e., establishing teaching skills as the first priority and expenditures for equipment and other resources only after certifying that training needs have been satisfied, and except for authorizing state traineeship programs and authorizing stipends, the Committee has not specified how such training, retraining, or inservice training should be carried out. It is not expected that the Department of Education will impose its own interpretation of congressional intent in this matter. Aside from clearing up possible ambiguities in definitions, etc., for which regulations already recorded for the Education Consolidation and Improvement Act may suffice, the Committee anticipates that the Department will go no further than did the Committee itself.

The provision which will require the greatest expense of personnel and paperwork is that which requires each state and local education agency to perform a comprehensive assessment of the mathematics and science education question in their respective areas of concern. The Committee beleives this assessment is necessary to provide a more up-to-date and complete picture of both the achievements needs of mathematics and science education.

Even though the administration of Title III, the Partnerships in Education program, has been transferred from NSF to the Department of Education, it is expected that the proposals for project awards under this title will be evaluated in a way similar to proposals for discretionary projects and that oversight applicable to such projects would apply to Title III grants.

The Committee anticipates that the bill will have no impact on personal privacy and will have an economic impact only insofar as teachers who receive awards or stipends will have additional income, and those who would otherwise have part-time school year or full-time summer employment will open up such jobs for others in the community.

IX. CBO BUDGET ESTIMATE

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE
Washington, DC, July 25, 1985.

Hon. ORRIN G. HATCH,
Chairman, Committee on Labor and Human Resources, U.S. Senate, 428 Dirksen Senate Office Building, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the attached cost estimate for S. 801, the National Science, Engineering, and Mathematics Authorization Act of 1986.

If you wish further details on this estimate, we will be pleased to provide them.

With best wishes,

Sincerely,

RUDOLPH G. PENNER, *Director.*

CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

1. Bill number: S. 801

2. Bill title: National Science, Engineering, and Mathematics Authorization Act of 1986.

3. Bill status: As amended and ordered reported by the Senate Committee on Labor and Human Resources, July 17, 1985.

4. Bill purpose: This bill authorizes the appropriation of $1,501.8 million in fiscal year 1986 for various activities of the National Science Foundation (NSF). Of this total, $1,340.2 million is for research and related activities, $50.5 million is for science and engineering education, and $110.1 million is for the U.S. Antarctic program. An appropriation not to exceed $1 million is authorized for payment of expenses incurred outside of the United States, to be paid from excess foreign currencies held by the Treasury.

S. 801 also authorizes annual appropriations to the Department of Education of $350 million for grants to state and local governments and of $50 million for participation partnership grants in each of fiscal years 1986, 1987, and 1988. The grants are to enhance elementary, secondary, and post-secondary education in engineering, mathematics, and the sciences.

This bill also makes a number of amendments to the National Science Foundation Act of 1950, the National Science Foundation Authorization Act, Fiscal Year 1978, and the Education for Economic Security Act. The amendments with budget implications would allow the NSF to adjust the amount and terms of its Alan T. Waterman award and to establish special commissions on research and education in science and engineering.

5. Estimated cost to the Federal Government:

[by fiscal years, in millions of dollars]

	1986	1987	1988	1989	1990
National Science Foundation:					
Function 250:					
Authorization level	1,501.8				
Estimated outlays	763.9	509.2	145.5	83.2	
Department of Education:					
Function 500:					
Grants to State and local governments:					
Authorization level	350.0	350.0	350.0		
Estimated outlays	35.0	315.0	350.0	315.0	35.0
Participation partnership grants:					
Authorization level	50.0	50.0	50.0		
Estimated outlays	25.5	42.7	47.2	24.6	7.4
Totals:					
Authorization level	1,901.8	400.0	400.0		
Estimated outlays	824.3	866.8	542.7	422.8	42.4

Basis of estimate: For the purposes of this estimate, it was assumed that all NSF funds would be appropriated prior to the beginning of fiscal year 1986 and that obligations and disbursements would follow historical patterns. The estimated outlays for the Department of Education grants to state and local governments assume that all authorized funds are appropriated and reflect the expected spending pattern of the current program, which was funded for the first time in fiscal year 1985. The participation partnership grants, previously under the aegis of the NSF, have not been funded in the past; estimated outlays, have been calculated using the spending patterns of similar grants programs of the NSF. Other provisions of this bill would result in no significant additional costs to the federal government.

6. Estimated cost to State and local governments: The elementary and secondary education grants under the Department of Education are allocated to state and local governments on a demographic basis and have no matching requirement. These grants were funded for the first time in fiscal year 1985 at $63 million. The participation partnership grants require that applicants be able to provide 50 percent of the necessary program funding. Up to 20 percent of total funding may be provided by state or local governments. Assuming that state and local governments provide all allowable funding, their matching share would be $10 million in each of fiscal years 1986, 1987, and 1988.

7. Estimate comparison: None.

8. Previous CBO estimate: None.

9. Estimate prepared by: Paul M. DiNardo, Deborah Kalcevic.

10. Estimate approved by: C. G. Nuckols for James L. Blum, Assistant Director for Budget Analysis.

X. CHANGES IN EXISTING LAW MADE BY S. 801

In accordance with rule XXVI, paragraph 12, of the Standing Rules of the Senate, the following provides a print of the statute of the part of the section thereof to be amended or replaced (existing law proposed to be omitted is enclosed in brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman):

NATIONAL SCIENCE FOUNDATION ACT OF 1950

* * * * * * *

FUNCTIONS OF THE FOUNDATION (42 U.S.C. § 1862)

SEC. 3. (a) The Foundation is authorized and directed—

(1) to initiate and support basic scientific and research and programs to strengthen scientific research potential and science education programs at all levels in the mathematical, physical medical, biological [engineering,] social, and other sciences, *and to initiate and support research fundamental to the engineering process and programs to strengthen engineering research potential and engineering education program at all levels in the various fields of engineering,* by making contracts or other arrangements (including grants, loans, and other forms of assistance) to support such scientific and educational activities and to appraise the impact of research upon industrial development and upon the general welfare;

(2) to award, as provided in section 10, scholarships and graduate fellowships in the mathematical, physical, medical, biological, engineering, social, and other sciences;

(3) to foster the interchange of scientific *and engineering* information among scientists *and engineers* in the United States and foreign countries;

(4) to foster and support the development and use of computer and other scientific methods and technologies, primarily for research and education in the sciences *and engineering;*

(5) to evaluate the status and needs of the various sciences *and fields of engineering* as evidenced by programs, projects, and studies undertaken by agencies of the Federal Government, by individuals, and by public and private research groups, employing by grant or contract such consulting services as it may deem necessary for the purpose of such evaluations; and to take into consideration the results of such evaluations in correlating the research and educational programs undertaken or supported by the Foundation with program projects, and studies undertaken by agencies of the Federal Government by individuals, and by public and private research groups;

(6) to maintain a current register of scientific and [technical] *engineering* personnel, and in other ways to provide a central clearing house for the collection, interpretation, and analysis of data on the availability of, and the current and projected for, scientific and [technical] *engineering* resources in the United States, and to provide a source of information for policy formulation by other agencies of the Federal Government; and

(7) to initiate and maintain a program for the determination of the total amount of money for scientific *and engineering* research including money allocated for the construction of the facilities where such research is conducted, received by each educational institution and appropriate nonprofit organization in the United States, by grant, contract, or other arrangement from agencies of the Federal Government, and to report annually thereon to the President and the Congress.

(b) The Foundation is authorized to initiate and support specific scientific *and engineering* activities in connection with matters relating to international cooperation, national security, and the effects of scientific *and engineering* applications upon society by making contracts or other arrangements (including grants, loans, and other forms of assistance) for the conduct of such activities. When initiated or supported pursuant to requests made by any other Federal department or agency, including the Office of Technology Assessment, such activities shall be financed whenever feasible from funds transferred to the Foundation by the requesting official as provided in section 14(g), and any such activities shall be unclassified and shall be identified by the Foundation as being undertaken at the request of the appropriate official.

(c) In addition to the authority contained in subsections (a) and (b), the Foundation is authorized to initiate and support scientific *and engineering* research, including applied research, at academic and other nonprofit institutions. When so directed by the President, the Foundation is further authorized to support, through other appropriate organizations, applied scientific *research and engineering research* relevant to national problems involving the public interest. In exercising the authority contained in this subsection, the Foundation may employ by grant or contract such consulting services as it deems necessary, and shall coordinate and correlate its activities with respect to any such problem with other agencies of the Federal Government undertaking similar programs in that field.

(d) The Board and the Director shall recommend and encourage the pursuit of national policies for the promotion of **[**basic research and education in the sciences**]** *research and education in science and engineering.*

(e) In exercising the authority and discharging the functions referred to in the foregoing subsections, it shall be one of the objectives of the Foundation to strengthen research and education in the sciences *and engineering* including independent research by individuals, throughout the United States, and to avoid undue concentration of such research and education.

DIRECTOR OF THE FOUNDATION (42 U.S.C. § 1864)

Sec. 5. (a) The Director of the Foundation (referred to in this Act as the "Director") shall be appointed by the President by and with the advice and consent of the Senate. Before any person is appointed as Director, the President shall afford the Board and opportunity to make recommendations to him with respect to such appointment. The Director shall receive basic pay at the rate provided for level II of the Executive Schedule under section 5313 of title 5, United States Code, and shall serve for a term of six years unless sooner removed by the President.

(b) Except as otherwise specifically provided in this Act (1) the Director shall exercise all of the authority granted to the Foundation by this Act (including any powers and functions which may be delegated to him by the Board), and (2) all actions taken by the Director pursuant to the provisions of this Act (or pursuant to the terms of a delegation from the Board) shall be final and binding upon the Foundation.

(c) The Director may from time to time make such provisions as he deems appropriate authorizing the performance by any other officer, agency, or employee of the Foundation of any of his functions under this Act, including functions under this Act, including functions delegated to him by the Board; except that the Director may not redelegate policy-making functions delegated to him by the Board.

(d) The formulation of programs in conformance with the policies of the Foundation shall be carried out by the Director in consultation with the Board.

[(e) The Director shall not make any contract, grant, or other arrangement pursuant to section 11(c) without the prior approval of the Board, except that a grant, contract, or other arrangement involving a total commitment of less than $2,000,000 or less than $500,000 in any one year, or a commitment of such lesser amount or amounts and subject to such other conditions as the Board in its discretion may from time to time determine to be appropriate and publish in the *Federal Register,* may be made if such action is taken pursuant to the terms and conditions set forth by the Board, and if each such action is reported to the Board at the Board meeting next following such action.**]**

(e)(1) The Director may make grants, contracts, and other arrangements pursuant to section 11(c) only with the prior approval of the Board or under authority delegated by the Board, and subject to such conditions as the Board may specify.

(2) The authority delegated by the Board under paragraph (1) of this subsection and the conditions specified by the Board shall be reported to the Chairman of the Committee on Labor and Human Resources of the Senate and the Committee on Science and Technology of the House of Representatives.

(f) The Director, in his capacity as ex officio member of the Board, shall, except with respect to compensation and tenure, be coordinate with the other members of the Board. He shall be a voting member of the Board and shall be eligible for election by the Board as Chairman or Vice Chairman of the Board.

NATIONAL SCIENCE BOARD (42 U.S.C. § 1863)

SEC. 4. (a) The Board shall consist of twenty-four members to be appointed by the President, by and with the advice and consent of the Senate, and of the Director ex officio. In addition to any powers and functions otherwise granted to it by this Act, the Board shall establish the policies of the Foundation within the framework of applicable policies as set forth by the President and the Congress.

(b) The Board shall have an Executive Committee as provided in section 7, and may delegate to it or to the Director or both such of the powers and functions granted to the Board by this Act as it deems appropriate.

(c) The persons nominated for appointment as members of the Board (1) shall be eminent in the fields of the basic, medical or social sciences, engineering, agriculture, education, research management or public affairs; (2) shall be selected solely on the basis of established records of distinguished service, and (3) shall be so selected as to provide representation of the views of scientific *and engineering* leaders in all areas of the Nation. In making nominations under this section, the President shall give due regard to equitable representation of scientists *and engineers* who are women or who represent minority groups. The President is requested, in the making of nominations of persons for appointment as members, to give due consideration to any recommendations for nomination which may be submitted to him by the National Academy of Sciences, *the National Academy of Engineering,* the National Association of State Universities and Land Grant Colleges, the Association of American Universities, the Association, of American Colleges, the Association of State Colleges and Universities, or by other scientific, *engineering,* or educational organizations.

(d) The term of office of each member of the Board shall be six years; except that any member appointed to fill a vacancy occurring prior to the expiration of the term of which his predecessor was appointed shall be appointed for the remainder of such term. Any person, other than the Director, who has been a member of the Board for twelve consecutive years shall thereafter be ineligible for appointment during the two-year period following the expiration of such twelfth year.

(e) The Board shall meet annually on the third Monday in May unless, prior to May 10 in any year, the Chairman has set the annual meeting for a day in May other than the third Monday and at such other times as the Chairman may determine, but he shall also call a meeting whenever one-third of the members so request in writing. A majority of the members of the Board shall constitute a quorum. Each member shall be given notice [by registered mail or certified mail mailed to his last known address of record] not less than fifteen days prior to any meeting, of the call of such meeting.

SPECIAL COMMISSIONS (42 U.S.C. § 1868)

[SEC. 9. (a) Each special commission established pursuant to section 4(i) shall consist of eleven members appointed by the Board, six of which shall be eminent scientists and five of whom shall be persons other than scientists. Each special commission shall choose its own chairman and vice chairman.

[(b) It shall be the duty of each such special commission to make a comprehensive survey of research, both public and private, being carried on in its field, and to formulate and recommend to the Foundation at the earliest practicable date an over-all research program in its field.]

SEC. 9. (a) Each special commission established under section 4(h) shall be appointed by the Board, and shall consist of such members as the Board considers appropriate

(b) Special commissions may be established to study and make recommendations to the Foundation on issues relating to research and education in science and engineering.

SCHOLARSHIPS AND GRADUATE FELLOWSHIPS (42 U.S.C. § 1869)

SEC. 10. The Foundation is authorized to award, within the limits of funds made available specifically for such purposes pursuant to section 16, scholarships and graduate fellowships for [scientific study or scientific work in the mathematical, physical, medical, biological, engineering, social, and other sciences] *study and research in the sciences or in engineering* at appropriate nonprofit American or nonprofit foreign institutions selected by the recipient of such aid, for stated periods of time. Persons shall be selected for such scholarships and fellowships from among citizens or nationals of the United States, and such selections shall be made solely on the basis of ability; but in any case in which two or more applicants for scholarships or fellowships, as the case may be, are deemed by the Foundation to be possessed of substantially equal ability, and there are not sufficient scholarships or fellowships, as the case may be, available to grant one to each of such applicants, the available scholarship or scholarships or fellow-ship or fellowships shall be awarded to the applicants in such manner as will tend to result in a wide distribution of scholarships and fellowships throughout the United States. Nothing contained in this Act shall prohibit the Foundation from refusing or revoking a scholarship or fellowship award, in whole or in part, in the case of any applicant or recipient, if the Board is of the opinion that such award is not in the best interests of the United States.

GENERAL AUTHORITY OF FOUNDATION (42 U.S.C. § 1870)

SEC. 11. The Foundation shall have the authority, within the limits of available appropriations to do all things necessary to carry out the provisions of this Act, including, but without being limited thereto, the authority—

(a) * * *

* * * * * * *

(c) to enter into contracts or other arrangements, or modifications thereof, for the carrying on, by organizations or individuals in the United States and foreign countries, including other government agencies of the United States and of foreign countries, of such scientific *or engineering* activities as the Foundation deems necessary to carry out the purposes of this Act, and, at the request of the Secretary of State or Secretary of Defense, specific scientific *or engineering* activities in connection with matters relating to international cooperation or national security, and, when deemed appropriate by the Foundation, such contracts or other arrangements or modifications thereof, may be entered into without legal consideration, without performance or other bonds and without regard to section 3709 of the Revised Statutes (41 U.S.C. § 5);

(d) to make advance, progress, and other payments which relate to scientific *and engineering* activities without regard to the provisions of section 3324 of title 31, United States Code.

* * * * * * *

(g) to publish or arrange for the publication of scientific, *engineering*, and technical information so as to further the full dissemination of information of scientific value consistent with the national interest, without regard to the provisions of section 87 by the Act of January 12, 1895 (28 Stat. 622), and section 11 of the Act of March 1, 1919 (40 Stat. 1270; 44 U.S.C. § 103 and first sentence of § 501);

* * * * * * *

(i) to prescribe, with the approval of the Comptroller-General of the United States, the extent to which vouchers for funds expended under contracts for scientific *or engineering* research shall be subject to itemization or substantiation prior to payment, without regard to the limitations of other laws relating to the expenditure of public funds and accounting therefor; and

(j) to arrange with and reimburse the heads of other Federal agencies for the performance of any activity which the Foundation is authorized to conduct.

PATENT RIGHTS (42 U.S.C. § 1871)

SEC. 12. [(a)] Each contract or other arrangement executed pursuant to this Act which relates to scientific *or engineering* research shall contain provisions governing the disposition of inventions produced thereunder in a manner calculated to protect the public interest and the equities of the individual or organization with which the contract or other arrangement is executed: *Provided, however*, That nothing in this Act shall be construed to authorize the Foundation to enter into any contractual or other arrangement inconsistent with any provision of law affecting the issuance or use of patents.

[(b) No officer or employee of the Foundation shall acquire, retain, or transfer any rights, under the patent laws of the United States or otherwise, in any invention which he may make or produce in connection with performing his assigned activities and which is directly related to the subject matter thereof: *Provided, however,* That this subsection shall not be construed to prevent any officer or employee of the Foundation from executing any application for patent on any such invention for the purpose of assigning the same to the Government or its nominee in accordance with such rules and regulations as the Director may establish.**]**

INTERNATIONAL COOPERATION AND COORDINATION WITH FOREIGN POLICY (42 U.S.C. § 1872)

SEC. 13. (a) The Foundation is hereby authorized to cooperate in any international scientific or *or engineering* activities consistent with the purposes of this Act and to expend for such international scientific *engineering* activities such sums within the limit of appropriated funds as the Foundation may deem desirable. The Director may defray the expenses of representatives of Government agencies and other organizations and of individual scientists or *engineers* to accredited international scientific *or engineering* congresses and meetings whenever he deems it necessary in the promotion of the objective of this Act. In this connection, with the approval of the Secretary of State, the Foundation may undertake programs, granting fellowships to, or making other similar arrangements with, foreign nationals for scientific *or engineering* study or scientific *or engineering* work in the United States without regard to section 10 or the affidavit of allegiance to the United States required by section 15(d)(2) of this Act.

(b)(1) The authority to enter into contracts or other arrangements with organizations or individuals in foreign countries and with agencies of foreign countries, as provided in section 11(c), and the authority to cooperate in international scientific *or engineering* activities as provided in subsection (a) of this section, shall be exercised only with the approval of the Secretary of State, to the end that such authority shall be exercised in such manner as is consistent with the foreign policy objectives of the United States.

(2) If, in the exercise of the authority referred to in paragraph (1) of this subsection, negotiation with foreign countries or agencies thereof becomes necessary, such negotiation shall be carried on by the Secretary of State in consultation with the Director.

MISCELLANEOUS PROVISIONS (42 U.S.C. § 1873)

SEC. 14. (a) The Director shall, in accordance with such policies as the Board shall from time to time prescribe, appoint and fix the compensation of such personnel as may be necessary to carry out the provisions of this Act. Except as provided in section 4(g), such appointments shall be made and such compensation shall be fixed in accordance with the provisions of title 5, United States Code, governing appointments in the competitive service, and the provisions of chapter 51 and subchapter 111 of chapter 53 of such title relating to classification and General Schedule pay rates: *Provided*, That the Director may, in accordance with such policies as the Board shall from time to time prescribe, employ such technical and professional personnel and fix their compensation, without regard to such provisions, as he may deem necessary for the discharge of the responsibilities of the Foundation under this Act. The members of the special commissions shall be appointed without regard to the provisions of title 5, United States Code, governing appointments in the competitive service.

[(b) Neither the Director, the Deputy Director, nor any Assistant Director shall engage in any other business, vocation, or employment while serving in such position; nor shall the Director, the Deputy Director, or any Assistant Director, except with the approval of the Board, hold any office in, or act in any capacity for, any organization, agency, or institution with which the Foundation makes any grant, contract, or other arrangement under this Act.**]**

(c) The Foundation shall not, itself, operate any laboratories or pilot plants.

(d) The members of the Board and the members of each special commission shall receive compensation for each day engaged in the business of the Foundation at a rate fixed by the Chairman but not exceeding the rate specified for the daily rate for GS-18 of the General Schedule under section 5332 of title 5, United States Code, and shall be allowed travel expenses as authorized by section 5703 of title 5, United States Code.

(e) Persons holding other offices in the executive branch of the Federal Government may serve as members of the special commissions, but they shall not receive remuneration for their services as such members during any period for which they receive compensation for their services in such other offices.

(f) In making contracts or other arrangements for scientific *or engineering* research, the Foundation shall utilize appropriations available therefor in such manner as will in its discretion best realize the objectives of (1) having the work performed by organizations, agencies, and institutions, or individuals in the United States or foreign countries, qualified by training and experience to achieve the results desired, (2) strengthening the research staff of organizations, particularly nonprofit organizations, in the United States, (3) aiding institutions, agencies, or organizations which, if aided, will advance scientific *or engineering* research, and (4) encouraging independent scientific *or engineering* research by individuals.

(g) Funds available to any department or agency of the Government for scientific or **[**technical**]** *engineering* research, or the provision of facilities therefor, shall be available for transfer, with the approval of the head of the department or agency involved, in whole or in part, to the Foundation for such use as is consistent with the purposes for which such funds were provided, and funds so transferred shall be expandable by the Foundation for the purposes for which the transfer was made.

* * * * * * *

(i) Information supplied to the Foundation or a contractor of the Foundation by an industrial or commercial organization in survey

forms, questionnaires, or similar instruments for the purposes of subsections (a)(5) or (a)(6) of section 3 of this Act may not be disclosed to the public unless such information has been transformed into statistical or aggregate formats which do not allow the identification of the supplier. The names of organizations supplying such information may not be disclosed to the public.

SECURITY PROVISIONS (42 U.S.C. § 1874)

SEC. 15. (a) * * *

(b)(1) In the case of scientific or [technical] *engineering* research activities under this Act in connection with matters relating to the national defense, with respect to which funds have been transferred to the Foundation from the Department of Defense in accordance with the provisions of section 14(g) of this Act, the Secretary of Defense shall establish such security requirements and safeguards, including restrictions with respect to access to information and property, as he deems necessary.

(2) In the case of scientific *or engineering* research activities under this Act in connection with matters relating to the national defense other than research activities referred to in paragraph (1) of this subsection, the Foundation shall establish such security requirements and safeguards, including restrictions with respect to access to information and property as it deems necessary.

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NATIONAL SCIENCE FOUNDATION AUTHORIZATION ACT, FISCAL YEAR 1978

* * * * * * *

[SEC. 6. (a) The National Science Foundation shall establish a Resource Center for Science and Engineering to be located at an education institution which—

[(1) enrolls substantial numbers of minority students, students from low-income families, or both;

[(2) is geographically located near one or more population centers of low-income families or minority groups;

[(3) demonstrates a commitment to encouraging and assisting minority students or students from low-income families, or both; and

[(4) has an existing or developing capacity to offer doctoral programs in science and engineering.

[(b) The Center established under this section shall—

[(1) support basic research and the acquisition of necessary research facilities and equipment;

[(2) serve as a regional resource in science and engineering for the community which the Center serves; and

[(3) develop joint educational programs with nearby pre-college and undergraduate institutions which enroll a substantial number of minority students or students from low-income families.

[SEC. 10. (a)(1) Each officer or employee of the National Science Foundation who performs a decisionmaking function in the handling of any application or proposal for a grant from or contract with the Foundation shall provide a written statement for the record identifying (in accordance with the standards promulgated under subsection (b)) any financial interest or other relevant interest he or she has in the person submitting the application or proposal and any academic affiliation he or she has with that person. If the application or proposal results in an award, the statement shall be made available to the public.

[(2) The Director shall remove or take other appropriate disciplinary action against any employee who knowingly violates the requirements of this subsection.

[(b)(1) Within 60 days after the date of the enactment of this Act, the Director of the National Science Foundation shall publish—

> [(A) proposed standards to implement the requirements of subsection (a), designed to minimize conflicts of interest and to assure that the appropriate files of the Foundation relating to any grant or contract referred to in such subsection contain a statement of any financial or other relevant interest which any of the officers and employees involved may have in the person or institution applying for or proposing the grant or contract as well as any academic affiliation which any of such officers and employees may have with such person or institution; and
>
> [(B) proposed standards appropriately requiring identification of any conflicts of interest by peer reviewers.

[(2) Within 120 days after the date of the enactment of this Act, the Director shal promulgate the standards published under paragraph (1), with such modifications as the Director may deem appropriate; and such standards shall take effect upon their promulgation.

[(c) The Director shall report annually to the Congress on the administration and enforcement of this section.

[(d) If the President issues an Executive order that requires financial disclosure by officers and employees of Federal agencies generally, only so much of this section as relates to peer reviewers and to academic affiliation of officers and employees shall remain effective.]

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Section 2 of Public Law 94-86

AN ACT Authorizing appropriations to the National Science Foundation for fiscal year 1976

Sec. 2. (a) * * *

(b) After the date of enactment of this Act the Director of the National Science Foundation, shall require, as a condition of any award made by the National Science Foundation for the purpose of precollege science *or engineering* curriculum development activities, that the awardee, and any subcontractors involved in the distribution, marketing, or selling of such science of *engineering* curricula, shall include in any testing agreement, sales contract, or other comparable legal instrument a provision requiring that all instructional materials, including teacher's manuals, films, tapes, or other supplementary instructional materials developed or provided under such award, subcontract, or other legal instrument will be made available within the school district using such materials for inspection by parents or guardians of children engaged in educational programs or projects of that school district. In addition, the Director of the National Science Foundation shall take such action as may be necessary and feasible to modify awards made for the purpose of precollege science *or engineering* curriculum development and implementation activities on or before the date of enactment of this Act to include such a provision in all possible cases.

* * * * * * *

TITLE I—NATIONAL SCIENCE FOUNDATION MATHEMATICS AND SCIENCE PROGRAMS

Part A—Teacher Institutes

GRANTS FOR TEACHER INSTITUTES AUTHORIZED

Sec. 101. The Foundation is authorized, in accordance with the provisions of this part, to make grants to State and local educational agencies and institutions of higher education [applying jointly,] for the establishment and operation of teacher institutes for the enhancement of the subject matter skills of public and private elementary and secondary school teachers of mathematics and physical and life sciences.

APPLICATIONS

Sec. 102. (a) Each local educational agency and institution of higher education, and each State educational agency and institution of higher education desiring to receive a grant under this part shall submit [a joint] *an* application at such time, in such manner, and containing or accompanied by such information as the Director may require. One or more local educational agencies may apply [jointly] with one or more institutions of higher education under the provisions of this section. A State educational agency may apply [jointly] with one or more institutions of higher education.

(b) Each such application shall—

(1) describe the establishment and operation of a teacher institute for elementary and secondary school teachers of mathematics and physical and life sciences, including—

(A) the designation of the institute as a full-time summer or part-time school year, or both;

(B) a description of the courses of study to be offered at the institute;

(C) an estimate of the number of teachers, including the number of teachers from private elementary and secondary schools, to attend the institute and describe the selection procedures;

(D) the nature and location of existing facilities to be used in the operation of the institute;

(E) the teaching and administrative staff for the institute;

(F) the academic credits, if any, to be awarded for the completion of the courses of study to be offered at the institute; and

(G) a schedule of stipends to be paid teacher participants in the institute, including (i) allowances for subsistence and other expenses for teachers attending the institute and their dependents and (ii) provisions assuring that there will be no duplication of Federal benefits paid to participants;

(2) provide assurances that the design and operation of the institute will involve the participation of both the subject matter departments or divisions of each institution of higher education making application as well as the teacher education department or division, if any, of each such institution;

(3) provide assurances that local education agencies will be involved in the design and operation of the institute in the case of applications submitted by institutions of higher education, or that institutions of higher education will be involved in the design and operation of the institute in the case of applications submitted by state or local education agencies;

[3]*(4)* provide for prior and continuing consultation with the State educational agency in the formulation and operation of the institute; and

[4]*(5)* provide such additional assurances as the Director deems essential to assure compliance with the requirements of this part.

DISTRIBUTION OF ASSISTANCE

SEC. 113(a)*(1)*. In approving applications under this part, the Director shall assure that there is an equitable distribution of institutes established and operated under approved applications among States and within States. The Director shall award not less than one institute in each State, except that the Director may waive the requirements of this sentence if there is no proposal from a State that meets the requirements of this part.

(2) All applications made under this part shall be subject to a peer review prior to approval.

(b) No grant to a single applicant may exceed [$200,000] *$300,000* in any fiscal year.

COOPERATION WITH BUSINESS CONCERNS

SEC. 114. Institutes assisted under this part may, to the extent possible, involve the cooperation of advanced technology business concerns and other business concerns which are able to supply assistance in the teaching of mathematics and science.

SPECIAL CONSIDERATION OF UNDERREPRESENTED AND UNDERSERVED POPULATIONS

SEC. 115. In providing financial assistance under this part the Foundation shall make every effort to ensure that consideration is given to applications which contain provisions designed to meet the needs of underrepresented and underserved populations.

PART B—MATHEMATICS AND SCIENCE EDUCATION DEVELOPMENT PROGRAMS

PROGRAM AUTHORIZED

SEC. 121. The Foundation is authorized, in accordance with the provisions of this part, to enter into agreements with institutions of higher education or local educational agencies for—

(1) developing and disseminating programs and materials for training, retraining, and inservice training for elementary and secondary school teachers in the fields of mathematics, science, including physical and life sciences, computer learning; and

(2) the research, development, and dissemination of instructional programs and materials for courses of study in elementary and secondary schools in the fields of mathematics, science, including physical and life sciences, and computer learning.

APPLICATIONS

SEC. 122. (a) No grant may be made under this part unless an eligible applicant, at such time, in such manner and containing or accompanied by such information as the Director may reasonably require. Each application shall contain assurances—

(1) that (A) in the case of an institution of higher education, the institution will enter into a cooperative agreement with one or more local educational agencies, (B) in the case of a State or local educational agency, the agency will enter into a cooperative agreement with one or more institutions of higher education, (C) in the case of a [profession of a] *professional* society or association described in subsection (b)(3) the association or society will enter into a cooperative agreement with one or more local educational agencies and one or more institutions of higher education, for the purpose of furnishing the activities authorized by this part;

(2) that the planning and implementation of the cooperative agreement will involve the participation of both the subject matter departments or divisions of each institution of higher education as well as the teacher education department or division, if any, of each such institution; and

(3) that the applicant has consulted with, as appropriate, the State agency for higher education or the State educational agency in the development of the program for which assistance is sought, and will assure appropriate participation of such agencies in the program.

(b) For the purpose of this part an eligible applicant means—

(1) an institution of higher education,

(2) a State or local educational agency, [and] *or*

(3) a professional society or association, in the fields of mathematics, physical or biological sciences, or engineering.

SPECIAL CONSIDERATION OF UNDERREPRESENTED AND UNDERSERVED POPULATIONS

SEC. 123. In providing financial assistance under this part, the Foundation shall make every effort to ensure that consideration is given to applications which provide for the development and improvement of instructional programs and materials designed to meet the needs of underrepresented and underserved populations.

PART C—CONGRESSIONAL MERIT SCHOLARSHIPS

SHORT TITLE

SEC. 131. This part may be cited as the "Congressional Merit Scholarships in Mathematics, Science, and Engineering Education".

MERIT SCHOLARSHIPS ESTABLISHED

SEC. 132. (a) The Foundation is authorized, in accordance with the provisions of this part, to award scholarships to individuals who are enrolled in institutions of higher education and who demonstrate outstanding potential for, and who plan to pursue, a career in teaching in the fields of mathematics, science, and engineering.

(b) Scholarships under this part shall be awarded for such period as the Foundation may prescribe, but for not to exceed four academic years.

(c)(1) A student awarded a scholarship under this part may attend any institution of higher education offering courses of study designed to prepare them for teaching careers. Such awards shall be available for periods of study commencing not sooner than the third undergraduate year.

(2) In order to be eligible for a scholarship under this part, each individual shall—

(A) concentrate, at the undergraduate level, in mathematics or science, and indicate a serious intent to teach at the elementary school level; or

(B) concentrate, at the undergraduate level, in mathematics or science, and indicate a serious intent to teach mathematics or science at the secondary school level; or

(C) concentrate, at the undergraduate level, in engineering and indicate a serious intent to teach at the postsecondary level, in an engineering discipline in which the Foundation has determined a shortage of qualified teachers.

(d) Not to exceed 25 per centum of the scholarships available under this part shall be available for students meeting the criteria of subsection (c)(2)(C).

SELECTION OF MERIT SCHOLARS

SEC. 33. (a) the Foundation shall establish criteria for the selection of merit scholars under this part.

(b) The Foundation shall adopt selection procedures which are designed to assure that—

(1) the number of individuals to be selected will not exceed the product of the number of Members of Congress for each State, multiplied by two, and that the individuals will be selected from among the residents of each State (and in the case of the District of Columbia and the Commonwealth of Puerto Rico, not to exceed ten individuals will be selected); and

(2) each recipient of a merit scholarship will enter into an agreement with the Foundation under which the recipient will agree—

(A) to comply with provisions of paragraph (2) of section 142(c) relating to concentration of study; and

(B) to pursue a career in teaching, as prescribed in section 142(c) for not less than two years for each academic year in which a merit scholarship award is received.

STIPENDS AND SCHOLARSHIP CONDITIONS

SEC. 34. (a) Each student awarded a merit scholarship under this part shall receive an award of $5,000 for each academic year of study.

(b) Each student awarded a merit scholarship under the provisions of this part shall continue to receive payments provided under this part for such scholarship only during such period as the Foundation determines that the student is maintaining satisfactory progress in, and devoting full time to, the course of study for which the scholarship is awarded.

(c) The Foundation is authorized to require reports containing such information in such form and to be filed at such time as the Foundation determines to be necessary from any student awarded a merit scholarship under the provisions of this part. Such reports shall be accompanied by a certificate from any appropriate official of the institution of higher education, approved by the Foundation, stating that such student is making satisfactory progress in, and is devoting essentially full time to, the study described in subsection (b).

PART D—DISCRETIONARY FUNDS OF THE DIRECTOR

AUTHORIZATION

SEC. 141. (a) From funds available for this part, the Director is authorized to make grants to and to enter into contracts with any public agency or any private organization to carry out any activity authorized by this title. In addition, from such funds, the Director is authorized, directly or by way of grant or contract, to conduct—

(1) a faculty exchange program between institutions of higher education (particularly institutions having established and nationally recognized research facilities) and eligible institutions; and

(2) programs of national significance promoting the improvement of instruction in the fields of mathematics, science, and engineering.

In carrying out the provisions of this part, the Director shall give special consideration to programs and activities for women in science and minorities in science which have been assisted by the Foundation prior to the date of enactment of this Act.

(b) For the purpose of this section the term "eligible institution" means an institution of higher education in any State which—

(1)(A) has an enrollment which includes a substantial percentage of students who are members of a minority group or who are economically or educationally disadvantaged; or

(B) is located in a community that is not within commuting distance of a major institution of higher education; and

(2) demonstrates a commitment to meet the special educational needs of students who are members of a minority group or are economically or educationally disadvantaged.

Part E—Graduate Fellowships

Sec. 151. (a) The Foundation is authorized to establish a program of grandate fellowships for the purpose of encouraging and assisting promising students to further their educations and research in science, mathematics and engineering.

(b) Applications shall be in such form and contain such information as the Foundation may require.

TITLE II—EDUCATION FOR ECONOMIC SECURITY

STATEMENT OF PURPOSE

Sec. 201. It is the purpose of this title to make financial assistance available to State and local educational agencies, and to institutions of higher education, to improve the skills of teachers and instruction in mathematics, science, computer learning, and foreign languages, and to increase the access of all students to such instruction, and thereby contribute to strengthening the economic security of the United States.

DEFINITION

Sec. 202. As used in this title, the term "junior or community college" means an institution of higher education—

(1) that admits as regular students individuals who are beyond the age of compulsory school attendance in the State in which the institution is located and who have the ability to benefit from the training offered by the institution;

(2) that does not provide an educational program for which it awards a bachelor's degree (or an equivalent degree); and

(3) that—

(A) provides an educational program of not less than two years that is acceptable for full credit toward such a degree, or

(B) offers a two-year program designed to prepare a student to work as a technician or at the semiprofessional level in engineering, scientific, or other technological fields requiring the understanding and application of basic engineering, scientific, or mathematical principles of knowledge.

PROGRAM AUTHORIZED

SEC. 203. (a) The Secretary is authorized to make grants to States and to make discretionary grants, in accordance with the provisions of this title, for strengthening the skills of teachers and instruction in mathematics, science, computer learning, and foreign languages.

(b) There are authorized to be appropriated $350,000,000 for the fiscal year 1984, [and] $400,000,000 for the fiscal year 1985 , *and $350,000,000 for each of the fiscal years 1986, 1987, and 1988* to carry out the provisions of this title.

ALLOTMENT TO STATES

SEC. 204. (a)(1) From 90 per centum of the amount appropriated to carry out this title for each fiscal year, the Secretary shall allot to each State an amount which bears the same ratio to such 90 per centum as the number of children aged five to seventeen, inclusive, in the State bears to the number of such children in all States, except that no State shall receive less than one-half of 1 per centum of the amount available under this subsection in any fiscal year.

(2) *(A)* The Secretary shall reserve [the remaining 10 per centum] *9 per centum of such amount* to carry out section 212, relating to discretionary grants of national significance.

(B) The Secretary shall reserve the remaining 1 per centum to carry out the provisions of subsection (c).

(3) For the purpose of this subsection, the term "State" does not include Guam, American Samoa, the Virgin Islands, the Northern Mariana Islands, or the Trust Territory of the Pacific Islands.

(4) The number of children aged five to seventeen, inclusive, in the State and in all States shall be determined by the Secretary on the basis of the most recent satisfactory data available to him.

(b) The amount of any State's allotment under subsection (a) for any fiscal year to carry out this title which the Secretary determines will not be required for that fiscal year to carry out this title shall be available for reallotment from time to time, on such dates during that year as the Secretary may fix, to other States in proportion to the original allotments to those States under subsection (a) for that year but with such proportionate amount for any of those other States being reduced to the extent it exceeds the sum the Secretary estimates that State needs and will be able to use for that year; and the total of those reductions shall be similarly reallotted among the States whose proportionate amounts were not so reduced. Any amounts reallotted to a State under this subsection during a year shall be deemed a part of its allotment under subsection (a) for that year.

[(c) There are authorized to be appropriated for each fiscal year for the purpose of this subsection amounts equal to not more than 1 per centum of the amount appropriated for such year under this title. The Secretary shall allot the amount appropriated pursuant to this subsection among Guam, American Samoa, the Virgin Islands, the Northern Mariana Islands, or the Trust Territory of the Pacific Islands according to their respective needs for assistance under this title. In addition for each fiscal year the Secretary shall allot from not less than one-half of such amount, to such agency as the Secretary deems appropriate, for programs authorized by this title for children in elementary and secondary schools operated for Indian children by the Department of the Interior. The terms upon which payments are made under the previous sentence shall be determined by such criteria as the Secretary determines will best carry out the purpose of this title.**]**

(c)(1) From the amount reserved for each fiscal year under subsection (a)(2)(B), the Secretary shall allot—

(A) not less than one-half of that amount to whatever agency the Secretary determines appropriate for programs authorized by this title for children in elementary and secondary schools operated for Indian children by the Department of the Interior; and

(B) the remainder of that amount among Guam, American Samoa, the Virgin Islands, the Northern Mariana Islands, and the Trust Territory of the Pacific Islands according to their respective needs for assistance under this title.

(2) The Secretary shall make payments under paragraph (1)(A) on whatever terms the Secretary determines will best carry out the purpose of this title.

IN-STATE APPORTIONMENT

SEC. 205. (a) For each of **[**the fiscal years 1984 and 1985.**]** *the fiscal years 1984, 1985, 1986, 1987, and 1988,* 70 per centum of each State's allotment under section 204 of this title shall be used for elementary and secondary education programs in accordance with section 206.

(b) For each of **[**the fiscal years 1984 and 1985,**]** *the fiscal years 1984, 1985, 1986, 1987, and 1988,* 30 per centum of each State's allotment under section 204 of this title shall be used for higher education programs in accordance with section 207.

ELEMENTARY AND SECONDARY EDUCATION PROGRAMS

SEC. 206. (a) The amount apportioned under section 205(a) from each State's allotment under this title shall be used by the State educational agency to strengthen elementary and secondary education programs in accordance with the provisions of this section.

(b)(1) Not less than 70 per centum of the amount available under this section shall be distributed to local educational agencies within the State. Each local educational agency shall use funds distributed under this paragraph for—

(A) the expansion and improvement of **[**inservice training**]** *training, inservice training,* and retraining of teachers and other appropriate school personnel in the fields of mathematics and science, including vocational education teachers who use mathematics and science in the courses of study the teachers teach; or

[(B) if the local educational agency determines that the agency has met its need for such training and retraining and subject to the provisions of section 210(c), computer learning and instruction, foreign language instruction, and instructional materials and equipment related to mathematics and science instruction.]

(B) if the local education agency determines that the agency has met its needs for training, inservice training, and retraining under subparagraph (A), subject to the provisions of section 210(c), such training, inservice training, and retraining in the fields of computer learning and foreign languages, and the acquisition of instructional materials and equipment related to mathematics and science instruction.

Such training and instruction may be carried out through agreements with public agencies, private industry, institutions of higher education, and nonprofit private organizations, including museums, libraries, educational television stations, professional science, mathematics and engineering associations, and other appropriate institutions. A local educational agency may carry out the activities authorized by this paragraph with one or more other local educational agencies within the State, or with the State educational agency, or both. Each local educational agency shall assure that programs of *training,* inservice training and retraining will take into account the need for greater access to and participation in mathematics, science, and computer learning programs and careers of students from historically underrepresented groups, including females, minorities, individuals with limited-English proficiency, the handicapped, and migrants.

[(2)(A) The State educational agency shall distribute 50 per centum of the funds available under this subsection to local educational agencies within the State according to the relative number of children enrolled in public and nonpublic schools within the school districts of such agencies.]

(2)(A) The State educational agency shall distribute 50 per centum of the funds available under this subsection to local educational agencies according to the relative enrollments in public and nonprofit schools within the school district of such agencies. Such relative enrollments may be calculated, at the option of the State educational agency, on the basis of the total number of children enrolled in public schools and (i) private nonprofit schools, or (ii) private nonprofit schools desiring that their children and teachers participate in programs or projects assisted under this title. Nothing in the preceding sentence shall diminish the responsibility of local education agencies to contact, on an annual basis, appropriate officials from private nonprofit schools within their school districts in order to determine whether such schools desire that their children and teachers participate in programs or projects assisted under this title.

(B) The State educational agency shall distribute 50 per centum of the funds available under this subsection based on the relative number of children aged five to seventeen who—

(i) are from families below the poverty level as determined under section 111(c)(2)(A) of the Elementary and Secondary Education Act of 1965; and

(ii) are from families above the poverty level as determined under section 111(c)(2)(B) of the Elementary and Secondary Education Act of 1965;

in the public schools of the local educational agencies within the State.

(3) The State educational agency shall renew payments to local educational agencies under this subsection based upon the criteria set forth in paragraph (2) of this subsection and a determination by the State educational agency that the local educational agency is implementing the program assisted under this title so that a substantial number of teachers in the public and private schools in the school district of such agency are served and several grade levels of instruction in such schools are involved in the program.

(c)(1) If a local educational agency is spending funds under subsection (b)(1)(B), not to exceed 30 per centum of the funds available to the local educational agency under subsection (b) may be used for the purchase of computer and computer-related instructional equipment.

(2) If a local educational agency is spending funds under subsection (b)(1)(B), not to exceed 15 per centum of the funds available to the local educational agency under subsection (b) may be used to strengthen instruction in foreign languages.

(d) Not less than 20 per centum of the amount available under this section shall be used by the State educational agency [for demonstration and exemplary programs] for—

(1) *demonstration and exemplary programs for* teacher training and retraining and inservice upgrading of teacher skills in the fields of mathematics and science, foreign language instruction, and computer learning,

(2) *demonstration and exemplary programs for* instructional equipment and materials in such fields and necessary technical assistance,

(3) *demonstration and exemplary programs for* special projects for historically underrepresented and underserved populations and for gifted and talented students, and

(4) the dissemination of information to all local educational agencies within the State relating to the exemplary programs in the fields of mathematics, science, foreign languages, and computer learning.

In providing financial assistance for such demonstration and exemplary programs, the State educational agency shall reserve not less than 20 per centum of the amount available under this subsection for special projects in mathematics and science, foreign languages and computer education to historically underrepresented and underserved populations of students, including females, minorities, handicapped individuals, individuals with limited-English proficiency, and migrant students, and to programs for gifted and talented students. The programs for gifted and talented students may include assistance to magnet schools for such students.

(e) Not less than 5 per centum of the amount available under this section may be used by the State educational agency to provide technical assistance to local educational agencies, institutions of higher education, and nonprofit organizations, including museums, libraries, and educational television stations, in the conduct of programs specified under subsection (b).

(f) Not to exceed 5 per centum of the amount available under this section may be used by the State educational agency for—

(1) the State assessment required by section 208 of this title; and

(2) the costs of administration and evaluation of the program assisted under this title.

HIGHER EDUCATION PROGRAMS

SEC. 207. (a) The amount apportioned under section 205(b) from each State's allotment under this title shall be used by the State agency for higher education for higher education programs in accordance with the provisions of this section.

(b)(1)(A) Not less than 75 per centum of the amount available for this section shall be used by the State agency for higher education for grants to institutions of higher education in accordance with the provisions of this subsection.

(B) The State agency for higher education shall make funds available on a competitive basis to institutions of higher education in the State which apply for payments under this section. The State agency for higher education shall make every effort to ensure equitable participation of private and public institutions of higher education.

(2) The amount available under this subsection shall be used for—

(A) establishing traineeship programs for new teachers who will specialize in teaching mathematics and science at the secondary school level;

[(B) retraining of secondary school teachers who specialize in disciplines other than the teaching of mathematics and science to specialize in the teaching of mathematics, science, or computer learning, including provision of stipends for participation in institutes authorized under title I; and]

(B) retraining of secondary school teachers who specialize in disciplines other than the teaching of mathematics, science, foreign languages, or computer learning to specialize in the teaching of mathematics, science, foreign languages, or computer learning, including the provision of stipends for participation in institutes authorized under title I; and

(C) inservice training for elementary, secondary, and vocational school teachers and training for other appropriate school personnel to improve their teaching skills in the fields of mathematics [and science,] *science, foreign languages* and computer learning, including stipends for participation in institutes authorized under title I.

Each institution of higher education receiving a grant under this subsection shall assure that programs of training, retraining, and inservice training will take into account the need for greater access to and participation in mathematics, science, *foreign languages* and computer learning and careers of students from historically underrepresented and underserved groups, including femals, minorities, individuals with limited-English proficiency, the handicapped, migrants and the gifted and talented.

(3) No institution of higher education may receive assistance under paragraphs (2) (B) and (C) of this subsection unless the institution enters into an agreement with a local educational agency, or consortium of such agencies, to provide inservice training and retraining for the elementary and secondary school teachers in the

public and private schools of the school district of each such agency.

(c)(1) Not less than 20 per centum of the amount available under this section shall be used by the State agency for higher education for cooperative programs among institutions of higher education, local educational agencies, State educational agencies, private industry, and [private nonprofit organizations] *nonprofit organizations* including museums, libraries, educational television stations, and professional mathematics, science, and engineering societies and associations for the development and dissemination of projects designed to improve student understanding and performance in science, mathematics, *computer learning* and critical foreign languages. In carrying out this subsection, the State agency for higher education shall give special consideration to programs involving consortial arrangements which include local educational agencies.

(2) For the purpose of paragraph (1) of this subsection, critical foreign languages include foreign languages designed by the Secretary pursuant to section 211(d).

(d) Not to exceed 5 per centum of the amount available under this section may be used by the State agency for higher education for—

(1) the State assessment required by section 208 of this title; and

(2) the costs of administration and evaluation of the program assisted under this title incurred by the State higher education agency.

STATE ASSESSMENT OF MATHEMATICS, SCIENCE, FOREIGN LANGUAGES, AND COMPUTER LEARNING

SEC. 208. (a) Each State which desires to receive grants under this title shall prepare not later than nine months following the date for which funds under this title become available, a preliminary assessment of the status of mathematics, science, foreign language, and computer learning within the State. Such preliminary assessment shall be made available to all local eductional agencies within the State to assist the local educational agencies to carry out the requirements of [section 210.] *section 210(b).* A final version of such assessment shall be submitted to the Secretary not later than the end of the first year for which funds under this title are made available. Each [first] *preliminary* assessment shall be prepared after an examination of the local assessments submitted under section 210. Each such assessment shall include a description and a five-year projection of—

(1) the availability of qualified mathematics, science, foreign language, and computer learning teachers at the secondary and postsecondary education levels within the State;

(2) the qualifications of teachers in mathematics, science, foreign languages, and computer learning at the secondary and postsecondary education levels, and the qualifications of teachers at the elementary level to teach mathematics, science, foreign languages, and computer learning;

(3) the State standards for teacher certification, including any special exceptions currently made, for teachers of mathematics, science, foreign languages, and computer learning;

(4) the availability of adequate curricula, instructional materials and equipment, in mathematics, science, foreign languages, and computer learning; and

(5) the degree of access to instruction in mathematics, science, foreign languages, and computer learning of historically underrepresented and underserved individuals and of the gifted and talented.

(b) Each such assessment shall also describe the programs, initiatives, and resources committed or projected to be undertaken within the State to—

(1) improve teacher recruitment and retention;

(2) improve teacher qualifications and skills in the fields of mathematics, science, foreign languages, and computer and computer learning;

(3) improve curricula in mathematics, science, foreign languages, and computer learning including instructional materials and equipment; and

(4) improve access for historically underrepresented and underserved populations, and for the gifted and talented, to instruction in mathematics, science, foreign languages, and computer learning.

(c)(1) Each State assessment shall be developed in consultation with the Government, the State legislature, State Board of Education, local educational agencies within the State, and representatives of—

(A) vocational secondary schools and area vocational education schools,

(B) public and private institutions of higher education,

(C) teacher organizations,

(D) private industry,

(E) other **[**public**]** *nonprofit* organizations, including libraries, museums, and educational television stations, and professional scientific and mathematics associations, and

(F) private elementary and secondary schools,

within the State.

(2) Each State assessment shall be submitted jointly by the State Educational agency and the State agency for higher education.

(d) the Secretary shall prepare and submit to the Congress a summary report of the final version of the assessments submitted by States under subsection (a) as soon as practicable after the receipt of such assessments.

STATE APPLICATION

Sec. 209. (a) Each State which desires to receive grants under this title shall file an application with the Secretary at such time, in such manner, and containing or accompanied by such information as the Secretary may reasonably require.

(b) Each such application shall—

(1) designate the State educational agency for the purpose of programs described in section 206, and the State agency for

higher education for programs described in section 207 as the agency or agencies responsible for the administration and supervision of the programs described in [sections 207 and 208] *sections 206 and 207,* as the case may be;

(2) describe the programs for which assistance is sought under the application;

(3) provide assurances that payments will be distributed by the State in accordance ith the provisions of [sections 207 and 208] *Sections 206 and 207* as the case may be;

(4) provide procedures—

(A) for submitting applications [by local educational agencies, institutions of higher education, junior or community colleges, and other organizations for programs described in section 206] *for programs described in sections 206 and 207* for distribution of payments under this title within the State, and

(B) for approval of applications by the appropriate State agency, including appropriate procedures to assure that the appropriate State agency will not disapprove an application without notice and opportunity for a hearing;

(5) provide assurances that—

(A) the State will prepare and submit the assessment required under section 208;

(B) in the second year for which funds are available under this title, the State will use funds for purposes consistent with the findings of the State assessment under section 208;

(C) for programs described in section 206, the provisions of section 210 and 211 will be carried out; and

(D) to the extent feasible, evaluations of the program assisted under this title will be performed;

(6) provide assurances that Federal funds made available under this title for any fiscalyear will be so used as to supplement, and to the extent practicable, to increase the level of funds that would, in the absence [of such funds, be available for] *or such Federal Funds, be available from non-Federal sources for* the purposes described in [sections 207 and 208] and in no case supplant such funds *from non-Federal sources;* and [sections 206 and 207]

(7) provide such fiscal control and accounting procedures as may be necessary (A) to ensure proper accounting of Federal funds paid to the applicant under this title, and (B) to ensure the verification of the programs assisted under the application.

(c) The Secretary shall expeditiously approve any State plan that meets the requirements of this section.

LOCAL EDUCATIONAL AGENCY ASSESSMENT

Sec. 210. (a) Each local educational agency which desires to receive a payment from the State educational agency pursuant to section 206 shall provide to the State educational agency an assessment of the local educational agency's need for assistance in—

(1) teacher training, retraining, and inservice training and the training of appropriate school personnel in the areas of

mathematics, science, foreign languages, and computer learning, including a description of the availability and qualifications of teachers in the areas of mathematics, science, foreign language, and computer learning, including the qualifications of teachers at the elementary level to teach in such areas;

(2) improving instructional materials and equipment related to mathematics and science education; and

(3) improving the access to instruction in mathematics, science, foreign languages, and computer learning of historically underserved and underrepresented individuals and of the gifted and talented, and an assessment of the current degree of access to such instruction of such individuals.

(b) Such assessment shall also describe the types of services to be provided pursuant to the program assisted under section 206, a description of how the services assisted will meet the program needs of the local educational agency, and in the second year for which funds under this title are made available, a description of how the services assisted will address unmet needs described under section 208.

(c) If a local educational agency determines, pursuant to section 206(b)(1), that the agency has met its teacher **[**retraining**]** *training, retraining* and inservice training needs in mathematics and science and desires to expend **[**its funds**]** *all or a portion of its funds* on other activities prescribed in section 206(b)(1)(B), the local educational agency may request the State educational agency to waive such training requirements. If the State educational agency determines that the local educational agency has met such teacher training needs, the State educational agency shall grant the waiver.

PARTICIPATION OF CHILDREN AND TEACHERS FROM PRIVATE SCHOOLS

SEC. 211. (a) To the extent consistent with the number of children in the State or in the school district of each local educational agency who are enrolled in private elementary and secondary schools, such State or agency shall, after consultation with appropriate private school representatives, make provision for including services and arrangements for the benefit of such children as will assure the equitable participation of such children in the purposes and benefits of this title.

(b) To the extent consistent with the number of children in the State or in the school district of a local educational agency who are enrolled in private elementary and secondary schools, such State, State educational agency, or State agency for higher education shall, after consultation with appropriate private school representatives, make provision, for the benefit of such teachers in such schools, for such inservice and teacher training and retraining as will assure equitable participation of such teachers in the purposes and benefits of this title.

(c) If by reason of any provision of law a State or local educational agency is prohibited from providing for the participation of children or teachers from private schools as required by subsections (a) and (b), or if the Secretary determines that a State or local educational agency has substantially failed or is unwilling to provide for such participation on an equitable basis, the Secretary shall waive such requirements and shall arrange for the provision of services to such children or teachers which shall be subject to the requirements of this section. Such waivers shall be subject to consultation, withholding, notice, and judicial review requirements in accordance with sections 557(b) (3) and (4) of the Education Consolidation and Improvement Act of 1981.

SECRETARY'S DISCRETIONARY FUND FOR PROGRAMS OF NATIONAL SIGNIFICANCE

SEC. 212. [(a) From 10 per centum of amounts appropriated under section 203(b), the Secretary shall make grants in accordance with this section.] *(a) From the amount reserved by the secretary under section 204(a)(2)(A), the secretary is authorized to carry out directly, or through grants, cooperative agreements, or contracts, projects which are authorized by this section.*

(b)(1) From 75 per centum of the amount available under this section in each fiscal year, the Secretary shall [make grants to] *make grants to and enter into cooperative agreements with* State and local educational agencies, institutions of higher education; and private nonprofit organizations, including museums, libraries, educational television stations, and professional science, mathematics, and engineering societies and associations for programs of national significance in mathematics and science instruction, computer learning, and foreign language instruction in critical languages. The Secretary shall give special consideration to provide assistance to local educational agencies, or consortia thereof, to establish or improve magnet schools for gifted and talented students. In [awarding of grants] *awarding of grants and cooperative agreements* the Secretary shall give special consideration to local educational agencies, institutions of higher education, and private nonprofit organizations, including museums, libraries, educational televisions stations, and professional science, mathematics, and engineering societies and associations providing special services to historically underserved and underrepresented populations in the fields of mathematics and science.

(2) The Secretary, from the amount available under paragraph (1) for each fiscal year, shall reserve not to exceed $3,000,000 in each such year for the director of the National Institute of Education for the purpose of conducting evaluation and research activities. Such evaluation and research activities shall include—

(A) a policy analysis of alternative methods to improve instruction in mathematics and science;

(B) an annual evaluation of the programs assisted under this title; and

(C) research on improving teacher training, retraining, inservice training, and retention, as well as the development of curriculum and materials in the fields of mathematics and science.

One-half of the funds reserved under this paragraph shall be used for the research activities described in clause (C).

(c) From 25 per centum of the amount available in each fiscal year, the Secretary shall make grants to institutions of higher education for the improvement and expansion of instruction in critical foreign languages.

(d) In determining which languages are critical to national security, economic, and scientific needs, the Secretary shall consult with the Secretary of State, the Secretary of Defense, the Secretary of Health and Human Services, and the Director of the National Science Foundation. The Secretary shall publish in the Federal Register a list of critical foreign languages.

PAYMENTS

SEC. 213. (a) From the amounts appropriated under section 203(b), the Secretary shall pay, in accordance with the provisions of this title, the costs of the programs and activities described in the application approved under section 209 and the costs of programs of national significance under [section 211.] *section 212.*

(b) Payments under this title shall be made as soon after approval of the application as practicable.

TITLE III—[NATIONAL SCIENCE FOUNDATION] *DEPARTMENT OF EDUCATION* PROGRAM FOR PARTNERSHIPS IN EDUCATION FOR MATHEMATICS, SCIENCE, AND ENGINEERING

SHORT TITLE

SEC. 301. This title may be cited as the "Partnership in Education for Mathematics, Science, and Engineering Act".

STATEMENT OF PURPOSE

SEC. 302. It is the purpose of this title to supplement State and local resources to—

(1) improve the quality of instruction in the fields of mathematics, science, and engineering in the State;

(2) furnish additional resources and support for research, student scholarships, and faculty exchange programs in the fields of mathematics, science, and engineering; and

(3) encourage partnerships in education between the business community, institutions of higher education, and elementary and secondary schools in the community.

DEFINITIONS

SEC. 303. As used in this title—

(1) the term "applicant" means with respect to activities described in section 305(a) an institution of higher education and the other participants described in paragraph (3) of section 305(a), and with respect to activities described in section 305(b) a local educational agency and the other participants described in paragraph (3) of section 305(b);

(2) the term "equipment" includes machinery, utilities, and built-in equipment and any necessary enclosures or structures to house them, and includes all other items necessary for the functioning of a particular facility as a facility for the provision of educational services, including items such as instruc-

tional equipment and necessary furniture, printed, published, and audio-visual instructional materials, and books, periodicals, documents, and other related materials; *and*

[(3) the term "Foundation" means National Science Foundation;**]**

[(4) the term "institution of higher education" has the same meaning given that term by section 1201(a) of the Higher Education Act of 1965;**]**

[(5) the term "States" includes the fifty States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Virgin Islands, the Trust Territory of the Pacific Islands, and the Northern Mariana Islands; and**]**

[(6)**]** *(3)* the term "State agency for higher education" means the State board of higher education or other agency or officer primarily responsible for the State supervision of higher education, or if there is no such officer or agency, an officer or agency designated by the Governor or by State law.

PROGRAM AUTHORIZED

SEC. 304. (a) The **[**Foundation**]** *Secretary* is authorized, in accordance with the provisions of this title, to make grants to applicants to pay the Federal share of the costs of the activities described in section 305.

[(b) There are authorized to be appropriated $30,000,000 for the fiscal year 1984, and $60,000,000 for the fiscal year 1985, to carry out the provisions of this title.**]**

(b) There are authorized to be appropriated $50,000,000 for each of the fiscal years 1986, 1987, and 1988 to carry out the provisions of this title.

AUTHORIZED ACTIVITIES

SEC. 305. (a)(1) An applicant may use payments received under this title in any fiscal year for higher education programs and activities described in this subsection.

(2) Grants under this subsection may be used for partnership in education programs—

(A) for the improvement of instruction in mathematics, science, computer science, and engineering education at the postsecondary level;

(B) for awarding scholarships to students at institutions of higher education in the fields of mathematics, science, computer science, and engineering;

(C) for the operation of faculty exchange programs by the institutions of higher education and business concerns within the State;

(D) for research in the fields of mathematics, science, computer science, and engineering;

(E) for the acquisition, rehabilitation, and renovation of equipment and instrumentation for use in instruction in the fields of mathematics, science, computer science, and engineering; and

(F) to promote public understanding of science, mathematics, and computer science.

(3) Education partnerships under this subsection may include institutions of higher education, business concerns, nonprofit private organizations, local educational agencies, professional mathematic and scientific associations, museums, libraries, educational television stations, and if the State so desires, appropriate State agencies.

(b)(1) An applicant may use payments received under this title in any fiscal year for programs and activities described in this subsection.

(2) A local educational agency may carry out an elementary and secondary school partnership in education program under which—

(A) elementary and secondary school teachers in the schools of local educational agencies who teach mathematics, science, or computer science are made available to local business concerns and business concerns with establishments located in the community to serve in such concerns or establishments.

(B) personnel of local business concerns and business concerns with establishments located in the community serve as consultants, lecturers, teaching assistants, or teachers of mathematics, science, or computer science in the elementary and secondary schools within the State;

(C) training and retraining is furnished to elementary and secondary school teachers of mathematics, science, and computer science under a cooperative arrangement between the State or local educational agency and appropriate business concerns;

(D) secondary school students observe, participate, and work in local business concerns and business concerns with establishments located in the community; and

(E) computer clubs and extracurricular activities involving modern technologies are established in elementary and secondary schools.

(3) Partnerships under this subsection may include local educational agencies, business concerns, nonprofit private organizations, institutions of higher education, professional mathematic and scientific associations, museums, libraries, educational television stations, and, if the State so desires, appropriate State agencies.

APPLICATION

SEC. 306. (a) Any applicant which desires to receive a grant under this title shall submit an application approved under section 307 to the **[**Foundation**]** *Secretary* at such time, in such manner, and accompanied by such additional information as the **[**Foundation**]** *Secretary* may reasonably require. Each such application shall—

(1) describe the activities for which assistance under this title is sought;

(2) provide assurances that not more than 5 per centum of the amount received by the applicant in any fiscal year may be expended on administrative expenses;

(3) with respect to each program for which assistance is sought, provide assurances that—

(A) 30 per centum of the funds for each such project will be furnished by business concerns within the community;

(B) 20 per centum of the funds will be supplied by—

(i) the State,

(ii) the institution of higher education or the local educational agency, as the case may be, participating in the program; and

(iii) the other parties participating in the program;

(C) no stipend will be paid directly to employees of a profitmaking business concern; and

(D) teachers participating in the exchange program may not be employed by the participating business concern with which the teacher served within three years after the end of the exchange program unless the teacher repays the full cost of the exchange program to the State and local educational agency, as the case may be; and

(4) provide assurances that whenever the program for which assistance is sought includes scholarships, the scholarships be awarded to undergraduate students at institutions of higher education within the State who wish to pursue a course of study in mathematics or science, engineering or computer science, and that each student awarded a scholarship under this title will receive a stipend which shall not exceed the cost of tuition at the institution of higher education plus a stipend of not to exceed $750 for each academic year of study for which the scholarship is awarded;

(5) set forth policies and procedures to assure that whenever the application includes a local educational agency; to the extent consistent with the number and location of children in the school district of such agency who are enrolled in private elementary and secondary schools, provision is made for the participation of such children in the program assisted under this title;

(6) provides assurances that consideration is given to programs and activities designed to meet the needs of underrepresented and underserved populations;

(7) provide assurances that in the consideration of applications submitted under section 307(a) that equitable consideration is given to applications submitted by private and public institutions of higher education; and

(8) provide such additional assurances as the [Foundation] *Secretary* determines essential to ensure compliance with the requirements of this title.

(b) A regional consortium of applicants in two or more States may file a joint application under the provisions of subsection (a) of this section.

SUBMISSION OF APPLICATIONS

SEC. 307. Each applicant within a State which desires to receive a grant under this title shall submit the application prepared in accordance with section 306 to the State agency on higher education or the State educational agency, as the case may be, for approval and shall submit the approved application the [Foundation] *Sec-*

retary under section 306. Each such application shall be submitted jointly by the local educational agency in the case of activities described in section 305(a), or an institution of higher education in the case of activities described in section 305(b), and each business concern or other party that is to participate in the program for which assistance is sought.

APPROVAL OF APPLICATIONS

SEC. 308. (a)(1) The [Foundation] *Secretary* shall establish criteria for approval of applications under this title.

(2) No application may be approved by the [Foundation] *Secretary* unless the State educational agency or the State agency for higher education, as the case may be, determines that the application is consistent with State plans for elementary and secondary education or State plans for higher education, as the case may be, in the State.

(b) The [Foundation] *Secretary* shall adopt approval procedures designed to assure that there is equitable distribution of grants among the States.

PAYMENTS; FEDERAL SHARE; LIMITATION

SEC. 309. (a)(1) The [Foundation] *Secretary* shall pay, to each applicant having an application approved under section 308, the Federal share of the cost of the program described in the application.

(2) The Federal share for each fiscal year shall be 50 per centum.

(3) The non-Federal share of payments under this title may be in cash or in kind, fairly evaluated, including plant, equipment, or services.

(b) Not more than 15 per centum of the funds appropriated under this title in any fiscal year may be paid to applicants in any single State.

XI. COMMITTEE ACTION

The Committee on Labor and Human Resources met on July 17, 1985, to consider S. 801, a bill to authorize appropriations for the National Science Foundation for fiscal year 1986. The Committee considered the bill and the following amendments:

An amendment reauthorizing titles I, II, III, IV, and VI of the Education for Economic Security Act for three years, adjusting line item authorizations for NSF, and making technical changes was adopted by unanimous voice vote.

An amendment by Senator Metzenbaum to reauthorize title VII of the Education for Economic Security Act with an amendment was debated by the Committee and withdrawn.

An amendment by Senator Kennedy to amend the NSF Organic Act of 1950 such that Assistant Directors may be appointed by the Director rather than by the President was rejected on a roll call vote of 7 yeas and 8 nos, senators voting as follows:

YEA	NO
Mr. Kennedy	Mr. Hatch
Mr. Pell	Mr. Stafford

Mr. Metzenbaum
Mr. Matsunaga
Mr. Dodd
Mr. Kerry
Mr. Simon

Mr. Quayle
Mr. Nickles
Mrs. Hawkins
Mr. Thurmond
Mr. Wallop
Mr. Grassley

The Committee ordered the bill, S. 801, as amended, favorably reported to the full Senate by voice vote.

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